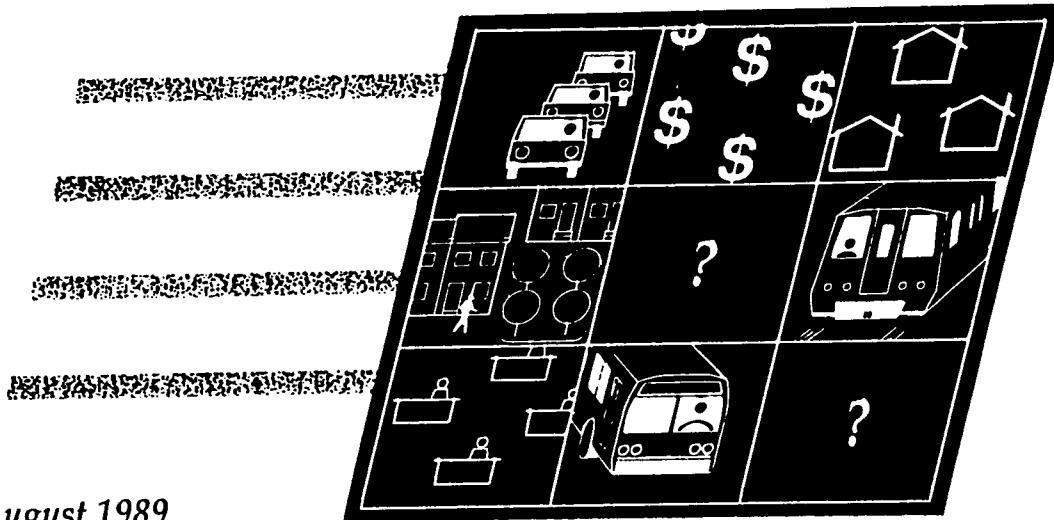


A POLICY VISION

Centers and Trails



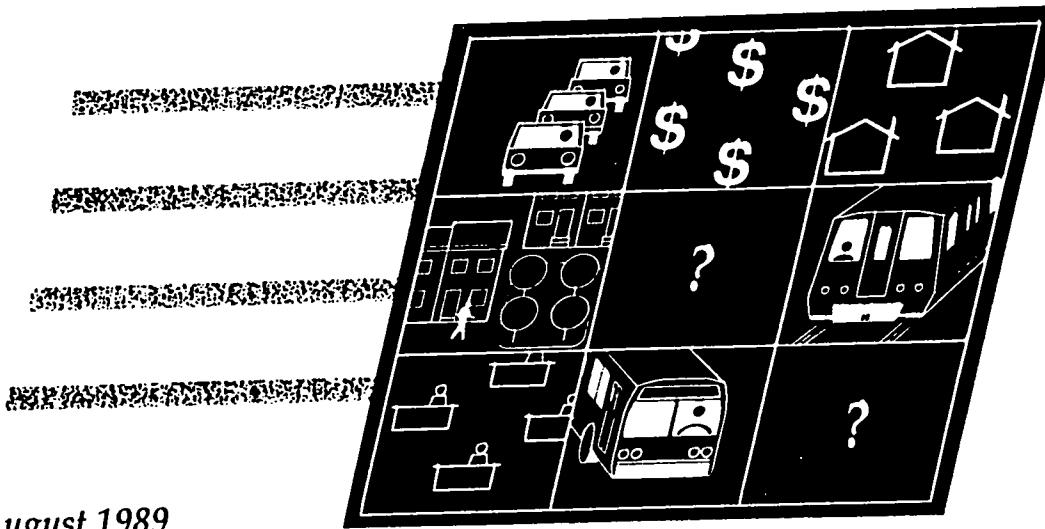
August 1989

Volume 1

*Montgomery County
Comprehensive Growth Policy Study*

A POLICY VISION

Centers and Trails



August 1989

Volume 1

*Montgomery County
Comprehensive Growth Policy Study*

ABSTRACT

Title: Comprehensive Growth Policy Study
Volume 1. A POLICY VISION: Centers and Trails

Author: Montgomery County Planning Department
The Maryland-National Capital Park and Planning Commission

Subject: Description of the major findings and conclusions of a comprehensive analysis of the forces likely to affect future growth in Montgomery County, Maryland.

Date: August 1989

Planning Agency: The Maryland-National Capital Park and Planning Commission

Source of Copies: The Maryland-National Capital Park and Planning Commission
8787 Georgia Avenue, Silver Spring, Maryland 20910-3760

Number of Pages: 75

Abstract: This document responds to four major questions concerning the ability of the County to handle growth for the period of 30 to 40 years into the future. The questions are organized under four different topics, called congestion, affordability, policy, and management. It contains relevant material from three other volumes that, together with this volume, comprise the complete Study. It may be read as a summary document representing the major findings and conclusions of the overall Study.

The Maryland-National Capital Park and Planning Commission

The Maryland-National Capital Park and Planning Commission is a bi-county agency created by the General Assembly of Maryland in 1927. The Commission's geographic authority extends to the great majority of Montgomery and Prince George's Counties: The Maryland-Washington Regional District (M-NCPPC planning jurisdiction) comprises 1,001 square miles, while the Metropolitan District (parks) comprises 919 square miles in the two counties.

The Commission has three major functions:

- (1) the preparation, adoption, and, from time to time, amendment or extension of the General Plan for the physical development of the Maryland-Washington Regional District;
- (2) the acquisition, development, operation, and maintenance of a public park system; and
- (3) in Prince George's County only, the operation of the entire County public recreation program.

The Commission operates in each county through a Planning Board appointed by and responsible to the county government. All local plans, recommendations on zoning amendments, administration of subdivision regulations, and general administration of parks are responsibilities of the Planning Boards.

ELECTED AND APPOINTED OFFICIALS

COUNTY COUNCIL

Michael L. Gudis, President
William E. Hanna, Jr., Vice President
Isiah Leggett, President Pro Tem
Bruce Adams, Council Member
Rose Crenca, Council Member
Neal Potter, Council Member
Michael L. Subin, Council Member

COUNTY EXECUTIVE

Sidney Kramer

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION COMMISSIONERS

Montgomery County Planning Board

Gus Bauman, Chairman
Richmond M. Keeney, Vice Chairman
Nancy M. Floreen
Carol G. Henry
John P. Hewitt

Prince George's County Planning Board

John N. Rhoads, Chairman
Roy I. Dabney, Jr., Vice Chairman
Samuel Y. Botts
Morgan Wootten
Margaret Yewell

Volumes

1 A Policy Vision

2 Alternative Scenarios

3 Global Factors

4 Appendices

Table of Contents

<i>Introduction and Summary</i>	1
<i>Chapter 1. The Congestion Problem</i>	5
<i>Chapter 2. The Affordability Issue</i>	31
<i>Chapter 3. Policy Visions</i>	47
<i>Chapter 4. Management Tools</i>	65

List of Figures

<i>Figure 1.1 SCENARIOS: Control Totals and Comparison to Past Growth</i>	7
<i>Figure 1.2 Transit Access Diagram</i>	9
<i>Figure 1.3 Master Plan of Highways Network</i>	10
<i>Figure 1.4 HOV Network (AM Peak)</i>	11
<i>Figure 1.5 RAIL Network</i>	12
<i>Figure 1.6 The Transit Incentives and Enhancements (TIE) Package</i>	13
<i>Figure 1.7 TRAFFIC: Effects of Alternative Scenarios</i>	15
<i>Figure 2.1 FISCAL (Sunny Prospect): Effects of Alternative Scenarios</i>	35
<i>Figure 2.2 FISCAL (Stormy Prospect): Effects of Alternative Scenarios</i>	37
<i>Figure 2.3 FISCAL (Hazy Prospect): Effects of Alternative Scenarios</i>	38
<i>Figure 2.4 Montgomery County Recommended FY 88 Operating Budget</i>	40
<i>Figure 2.5 Tax Burden</i>	43
<i>Figure 4.1 Jobs Per Household, 1960-1988</i>	76

INTRODUCTION AND SUMMARY

Montgomery County has experienced a rapid rate of urban growth in the past five years. Although this growth has been contained within the framework of the County's growth management system, the experience has justified taking a deeper look into the future. Recognizing the importance of long range planning, the Montgomery County Council commissioned first a broad scale examination of future prospects by an appointed citizen advisory group, called the Commission on the Future. Second, the Council assigned to the Planning Commission a further technical study, called the Comprehensive Growth Policy Study (CGPS).

The four volumes of the CGPS contain a technical analysis of current trends and forces that affect urban growth. They also suggest some possible directions for a policy response. However, the CGPS is a study, not a plan. No specific actions by the Planning Commission, County Council or County Executive are necessary. The documents are intended to provide a background frame of reference for use as appropriate in such future decision making as the adoption of individual Master Plans, Annual Growth Policies, Capital Improvements Programs, etc.

Volume 1, *A Policy Vision*, summarizes the major conclusions of the study. It discusses the topics of congestion, affordability, policy making and the management system. Volume 2, *Alternative Scenarios*, describes in detail how a number of alternative future growth

scenarios were evaluated, and contains considerable information about the feasibility and cost of alternative transportation systems. Volume 3, *Global Factors*, summarizes the views of a number of experts with regard to trends and forces at work in the world at large, which could have a significant effect on Montgomery County in the future. Volume 4, *Appendices*, contains a variety of supporting information that is referenced in the other volumes.

Volume 1, *A Policy Vision*, is organized by chapters that correspond to the four basic questions that this CGPS report addresses:

- (1) can we grow without excessive congestion?
(Chapter 1)
- (2) can we afford the cost of growth?
(Chapter 2)
- (3) how should we approach these problems?
(Chapter 3)
- (4) are the present management tools adequate?
(Chapter 4)

SUMMARY IN A NUTSHELL

1. Can We Grow Without Excessive Congestion?

Yes, but only under certain conditions.

Basically, the number of cars on the roads must be managed (e.g., set a goal of reducing the average auto driver share of work trips from 75 percent to 50 percent).

To accomplish such a goal, we would need to:

- (a) introduce new travel networks (e.g., trolley, van, and hiker/biker trails);
- (b) cluster land uses at points along these networks (e.g., urban village centers); and
- (c) take actions to help people break the automobile habit (e.g., auto/transit pricing and pedestrian friendly design).

2. Can We Afford the Cost of Growth?

Probably, but only under certain conditions.

Primarily some funding patterns need to shift from the private sector to the public sector (i.e., reduce private sector expenditure on automobiles and increase public sector revenue for transportation). Some ways to help this happen could be to:

- (a) tax the use of the private automobile (gas tax, parking fees, etc.); and
- (b) obtain more direct state road and rail construction.

3. How Should We Approach These Problems?

The growth management problem is nationwide, even worldwide. Primarily the challenge is how to control urban sprawl and contain the environmental, economic, and social costs it engenders.

Montgomery County has accomplished more in this regard than most of the suburban jurisdictions in the nation. The preservation of open space under the "Wedges and Corridors" Plan has been a significant achievement over the past twenty-five years. Today an additional challenge faces us in terms of travel behavior. The County's Commission on the Future has pointed the way. Without losing sight of "Wedges and Corridors," we should consider shifting our focus towards a vision called "Centers and Trails."

4. Are the Present Management Tools Adequate?

No, some refinements should be considered.

For the long run, the most important would appear to be the establishment of appropriate state and local regional growth management agreements and mechanisms.

But also within Montgomery County, the following could be candidates for further exploration and action over the next several years:

- (a) a new Travel Network Plan (to preserve rights-of-way for trolley, van, and hiker/biker trails);
- (b) establishment of adequate local transportation revenue sources (e.g., local piggyback on state gas tax);
- (c) revision of master plans and zoning over time to further reduce sprawl and increase strategic concentration (urban village centers);
- (d) incorporation of transit/pedestrian-friendly design principles into the subdivision and site plan review process;
- (e) resolution of legal issues regarding how to enforce staging limits that are defensible in court (Adequate Public Facility Test at Subdivision versus at Zoning); and
- (f) expansion of research into: a) the economic and fiscal forces that affect housing prices, and b) policies to address the affordability issue.

Chapter 1

Chapter 1: THE CONGESTION PROBLEM

Section A: THE QUESTION IN PERSPECTIVE

Can we grow without excessive congestion?

Recent experience suggests to many people that rapid growth results in unacceptable levels of automobile traffic congestion, overcrowding of school facilities, and similar problems. Others express concern about the environmental impacts of urban growth, ranging from macro-scale air and water quality issues to micro-scale tree preservation issues.

On the other hand, tight constraints on urban growth are frequently perceived by business enterprises as unnecessary bureaucratic intrusions into the operations of the private market. Others are concerned that limiting growth may lead to a loss of economic vitality, which robs the community of its potential to be an exciting and stimulating place of cultural advancement.

Public discussion of these growth management issues frequently focuses around the notion of "excessive congestion." The term congestion implies a crowding of things within a limited space, to a level or degree beyond the normal or natural state of affairs. Thus, the measurement of congestion is essentially a matter of dimensions in space. But it has a dimension in time as well. Extreme levels of congestion may be tolerated for only a limited period of time, whereas moderate levels

may be endured for much longer periods. This timing dimension makes congestion difficult to measure.

As it happens, our experience of congestion tends to fluctuate on a cyclical daily basis. Human beings typically join with others in relatively congested environments during the working day, and sometimes the entertainment evening, but then retire to rest and sleep in relative seclusion. Similarly, there is a weekly cycle, and even a longer annual cycle of an alternating congestion/diffusion experience, that forms a rhythmic element that is part of the general experience of life.

The congestion concept can be applied to the realm of nature as well. Pollution is simply another name for an excessive concentration of certain organic or mineral elements, one that cannot be diffused fast enough, through natural chemical processes, to maintain conditions safe for the life of other important organisms (such as human beings). Perceived in this generic way, the term congestion may be used as an indicator of a wide variety of experiences that collectively affect the overall "quality of life." But it must be used with great caution. It is a tricky thing to measure and interpret properly.

For urban planning, three measurement questions are especially important. The first is which elements of experience are to be selected for congestion measurement (e.g., traffic, schools, hospitals, supermarkets, etc.)? The second is how can the numerical measurement be ex-

pressed in terms that ordinary people can learn the meaning of (cf., Dow Jones index, air quality index, percentage probability of rain, etc.)? The third is what standard of "normality" should be selected as a benchmark against which to determine when congestion becomes "excessive"?

This report uses vehicle traffic congestion (i.e., the number of vehicles per lane of roadway) as the basic reference point for the discussion of all the other aspects of urban growth. It uses the terms developed by highway engineers to measure traffic congestion (i.e., levels of service A, B, C, D, E, and F), and extrapolates from their original local application (i.e., to individual roadway intersections) to apply them to a large area (containing many intersections), producing a single average index of traffic congestion for the County as a whole. Finally, it uses the same congestion level as the adopted FY 90 Annual Growth Policy as the norm against which to compare future possible levels of traffic.

Although the report focuses on transportation, it recognizes the significance of other important factors, such as natural resources, water and sewer facilities, schools and other public facilities. As a "comprehensive" growth policy study, it addresses all the elements of the urban growth future. But it concentrates on the transportation infrastructure that links all parts of the County together.

A medical analogy might be a decision to focus on the arterial circulatory system of the body, because of a perception that the greatest threat to future health may

come from high blood pressure and hardening of the arteries. It is assumed that if traffic congestion can be managed adequately in the future, problems of congestion and pollution in other aspects of urban life also can be taken care of. The sections below explain how future traffic congestion was analyzed.

Section B: THE SCENARIO APPROACH

Economic Scenarios

Because the factors that affect long term urban growth are so complex, a decision was made to analyze alternative possible future scenarios rather than a single forecast. Four economic scenarios were selected, called FAST, SLOW, JOBS, and HOUSING. Figure 1.1 shows the number of jobs and housing units that were assumed for each of these alternatives.

In general, they represent somewhat more growth than has taken place over the last 30 years. A target date of the year 2020 was assumed for those parts of the study that required a time dimension (i.e., fiscal analysis) but otherwise the scenarios represent abstract future states that could occur any time after 2020. Volume 2, Alternative Scenarios, describes in detail how these scenarios were developed and evaluated. The description below contains selected material from this volume.

Geographic Scenarios

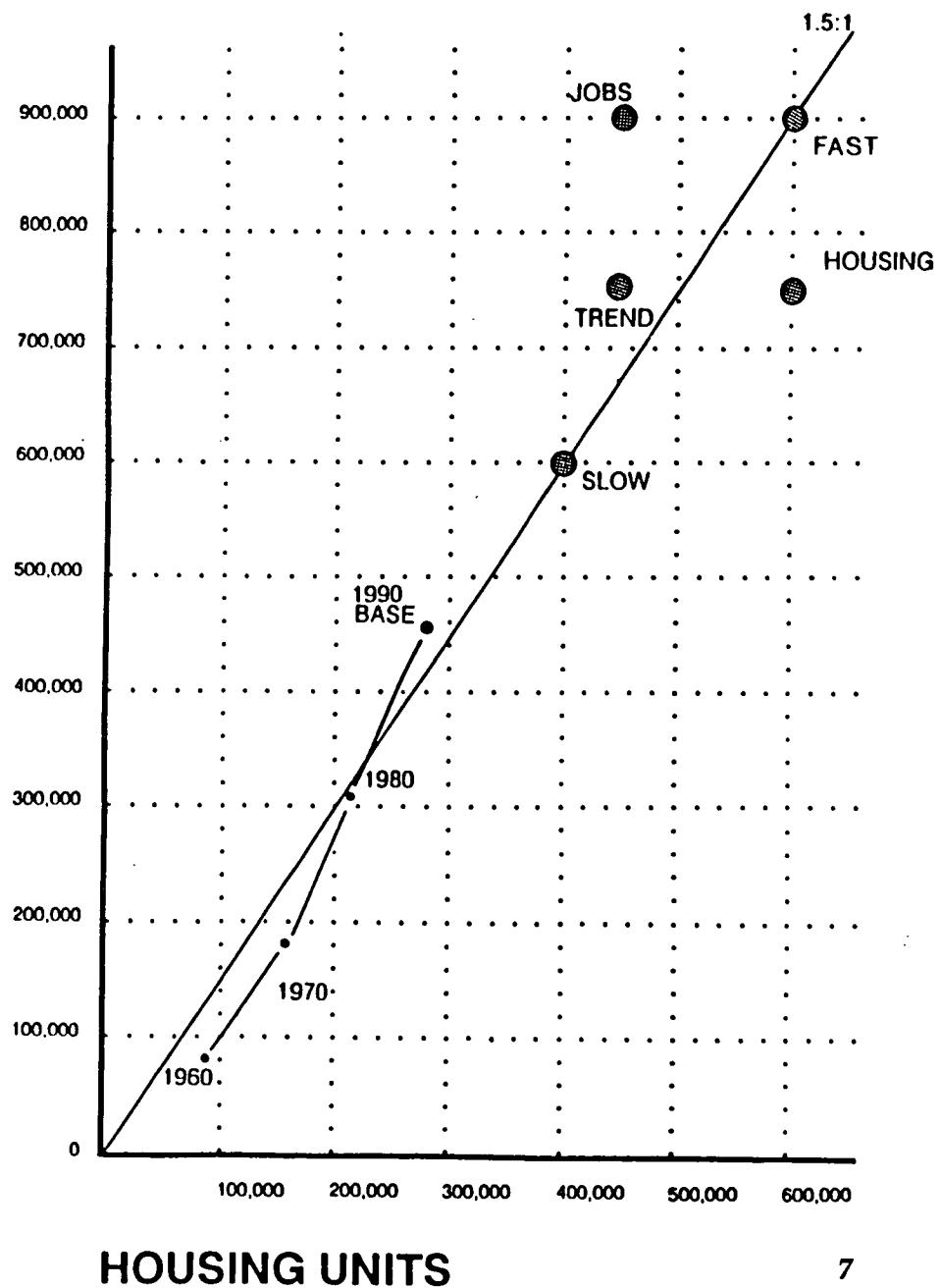
In addition to assigning a total number of jobs and hous-

FIGURE 1.1

SCENARIOS: Control Totals and Comparison to Past Growth

CGPS COUNTY CONTROL TOTALS			
	J/H RATIO	JOBs	HOUSING UNITS
1990 BASE	1.6	455,000	280,000
TREND	1.7	750,000	450,000
JOBs OVER HOUSING	2.0	900,000	450,000
HOUSING OVER JOBS	1.3	750,000	600,000
FAST & BALANCED	1.5	900,000	600,000
SLOW & BALANCED	1.5	600,000	400,000

JOBS



ing units to each scenario, it was necessary also to allocate these numbers to subareas of the County, and to make other assumptions about the nature of the buildings and the transportation system. Three alternative geographic scenarios were developed, called AUTO, VAN, and RAIL. Although the names given to the scenarios were based on the different transportation emphasis of each, each scenario also differed with regard to the nature of the buildings, or to state it another way, with regard to the degree of land use concentration or diffusion.

Figure 1.2 shows schematically the difference between three different patterns of land concentrations, and the generic effect that these differences have on how many people will use transit, if it is available, for the commuter home to work trip. In the left panel, where both home origins and work destinations are dispersed, only a small proportion will use transit. In the middle panel, where the work destinations are clustered more densely around transit stops, the proportion goes up significantly. And in the right panel, where both the work and the home destinations are clustered densely around transit stops, the proportion rises even more dramatically. Although these proportions are conceptual rather than precise, they do illustrate a general truth about human behavior, as it is conditioned by the land use pattern within which personal mobility choices are made.

Although it is an oversimplification, it is illustrative to describe the land use patterns of the three different geographic scenarios as follows. In the AUTO scenario,

which has a transportation network that adds the build-out of the Master Plan of Highways, the land use basically follows the pattern of the left panel in Figure 1.2. In the VAN scenario, which adds a new network of rights-of-way for carpools, vanpools, and buses, the land use basically follows the pattern of the middle panel. In the RAIL scenario, which adds a new light rail network, the land use basically follows the pattern of the right panel.

Transportation Networks

The different transportation networks assumed for the three scenarios are reflected in Figures 1.3., 1.4, and 1.5. The build-out of the present Master Plan of Highways (Figure 1.3) is assumed for all three, but, in addition, the VAN scenario adds a layer of new rights-of-way for carpools, vanpools, and buses on top of the highways (Figure 1.4), and the RAIL scenario adds, alternatively, a layer of new rights-of-way for light rail facilities (Figure 1.5).

Transit Incentives and Enhancements

In addition to a variation in transportation networks and land use configurations, each geographic scenario also made different assumptions with regard to what is called the "TIE" package, an acronym standing for "Traffic Incentives and Enhancements." Figure 1.6 outlines the differences between the weak, moderate, and strong levels of this package of transportation pricing policies and micro-scaled urban design environments. Since human travel behavior, in an environment of free

FIGURE 1.2 Transit Access Diagram

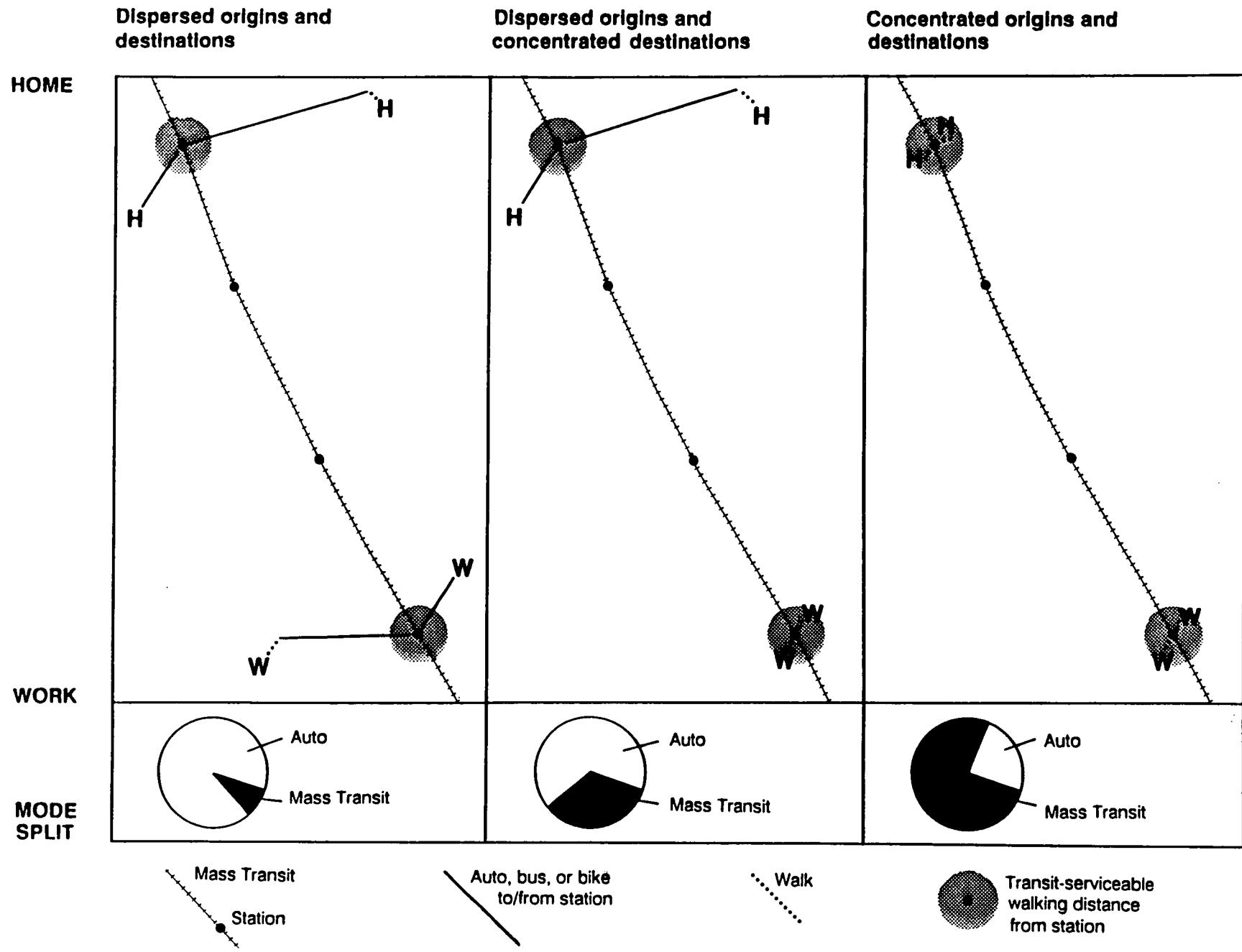
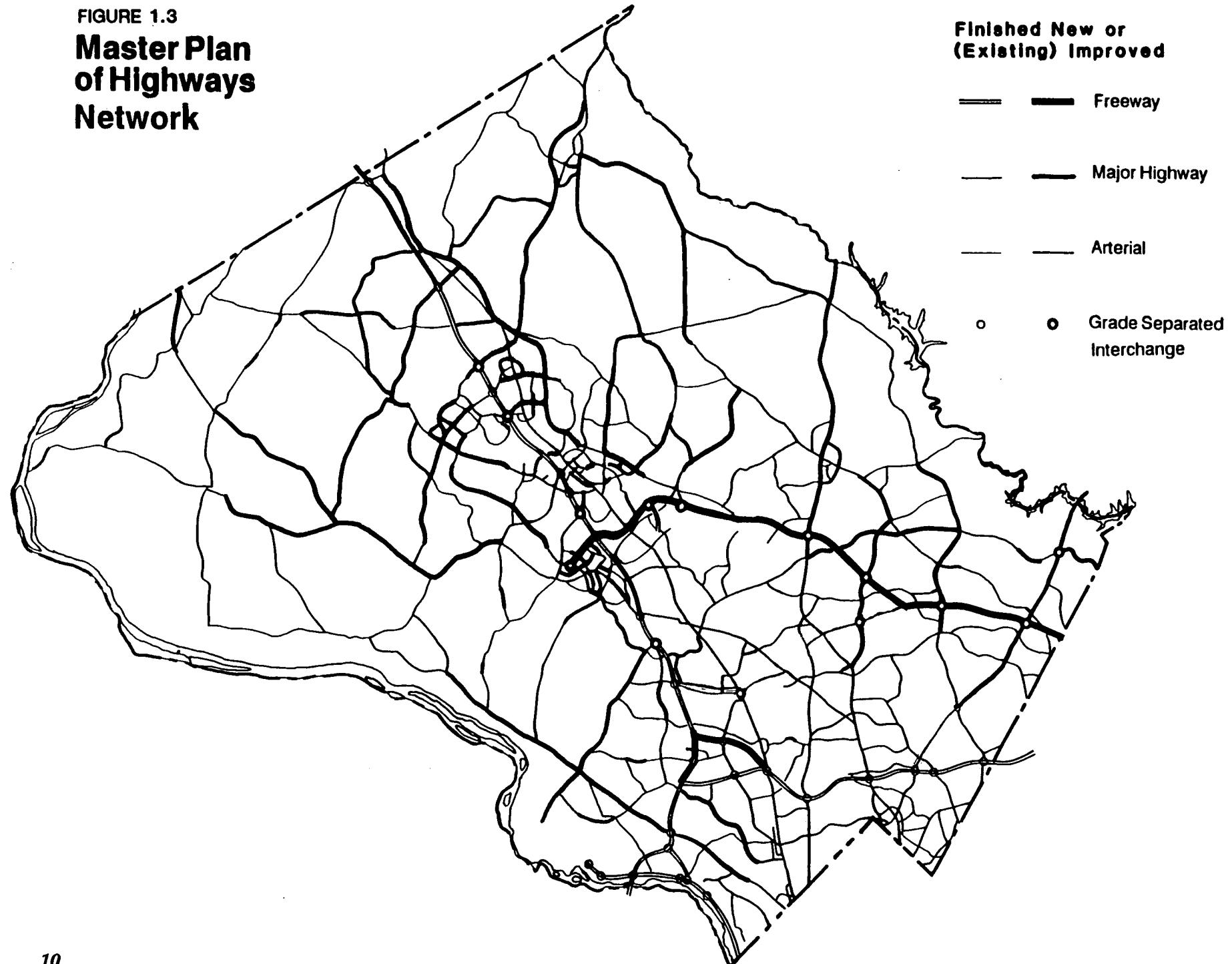


FIGURE 1.3
Master Plan
of Highways
Network



**FIGURE 1.4 HOV Network
(AM Peak)**

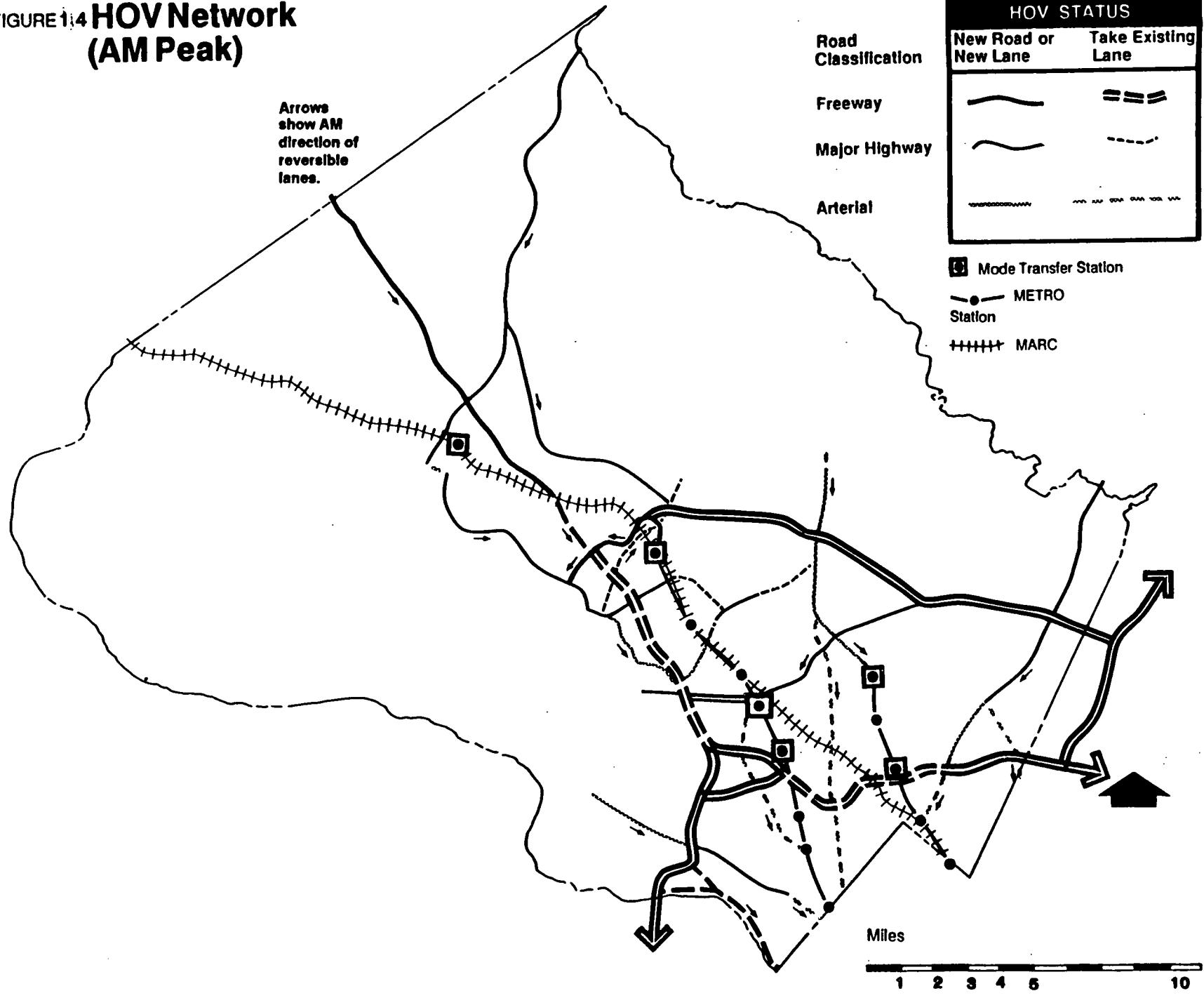


FIGURE 1.5
RAIL Network

- ++++ MARC
- Station (Existing)
- Station (Proposed)
- Metro
- Station (Existing)
- Station (Proposed)
- Light Rail
- Stop
- Priority Bus

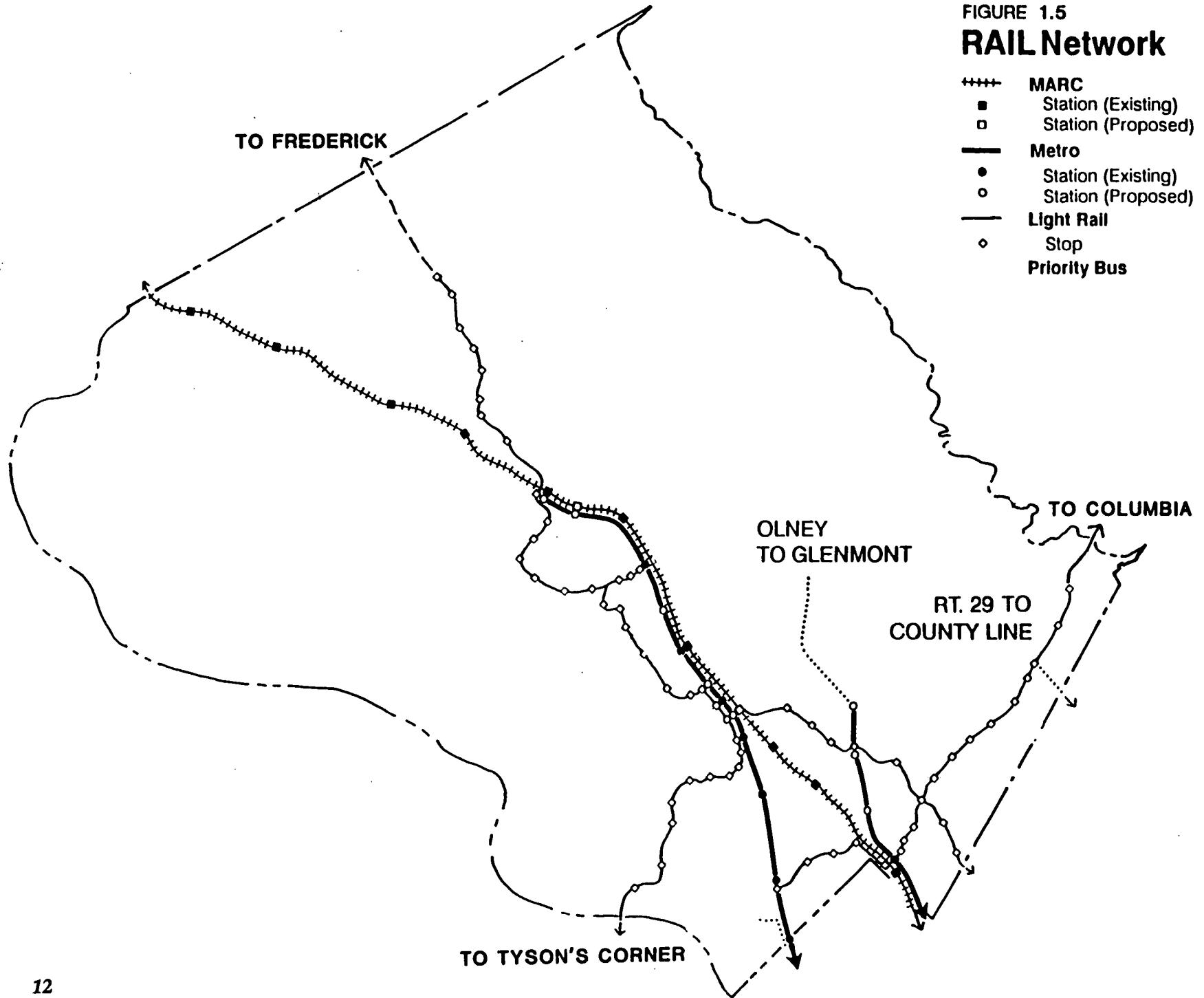


Figure 1.6
THE TRANSIT INCENTIVES AND ENHANCEMENTS (TIE) PACKAGE
A Comparison of Mode Choice Factors Assumed for Travel Modeling

TIE Package Policy Option	Parking cost in Major Employment Centers	Automobile Operating Costs	User-Perceived Transit Fares	Quality of Pedestrian/bike Transit access	Household Auto-Mobile Ownership Levels	Park & Walk Time at Destination
WEAK (i.e., Current Policies)	1988 Parking User Fees, e.g., Silver Spring CBD—\$4/day Shady Grove West—\$0/day Life Sciences Center—\$0/day White Oak—\$0/day	1988 Cost (0.15/mile)	1988 fares	Poor conditions in most of County except down-County CBDs	Somewhat higher than 1988 to reflect recent trends (2.2 cars/household for County)	1988 conditions (2-3 minutes from parking to door)
MODERATE (used with VAN Scenario)	Free everywhere for HOVs Much higher for LOVs, e.g., Silver Spring CBD—\$12/day Shady Grove West—\$10/day Life Sciences Center—\$8/day White Oak—\$4/day	1988 Cost (0.15/mile)	1988 fares	Modest improvements in sidewalks, bike paths, and transit serviceable site planning	Same as 1988 (1.9 cars/household for County)	Same as 1988
STRONG (Used with RAIL Scenario)	Much higher fees for all autos, e.g., Silver Spring CBD—\$12/day Shady Grove West—\$10/day Life Sciences Center—\$8/day	(\$0.30/mile) Higher gas tax and regulation fees	1/2 of 1988 fares due to equilization of commuter subsidies	Major enhancements in sidewalks, bike paths, and transit serviceable site planning in and near all growth nodes.	Slightly lower than 1988 for areas within walking distance of transit stations (1.8 cars/household for County)	Higher times in all growth nodes to reflect lower parking supply

choice, will be influenced significantly by the relative level of these TIE elements, it was necessary to make explicit assumptions about them for each scenario. In general, the weak level was assigned to the AUTO scenario, the moderate level to the VAN scenario, and the strong level to the RAIL scenario. Experience suggests that this TIE package is a very important factor that deserves equal attention to the other two factors of the transportation network and the land concentration pattern.

Combined Scenario Analysis

When different economic scenarios were combined with different geographic scenarios, a set of combined "geo-economic" scenarios was produced. About ten of these were selected for detailed analysis, using two computer simulation models, called TRAVEL and FISCAL. The following reports on the results of the TRAVEL model tests, and the implications of the alternative scenarios with regard to traffic. Chapter 2 reports on the results of the FISCAL model tests.

Section C: TRAFFIC CONGESTION: CONCLUSIONS

Figure 1.7 shows diagrammatically the results of testing ten geo-economic scenarios on the TRAVEL model. Each scenario is represented by a circle, with letters identifying its economic character and geographic pattern, and with shading identifying the level of TIE package applied to it. The vertical axis shows the average level of

traffic congestion for the County as a whole, and the horizontal axis shows the average share of all work trips that is occupied by automobile drivers. The shaded band called "LOS Standard" represents the norm as it exists in the FY 90 Annual Growth Policy, and as it could rise if the large amount of new transit assumed in the RAIL scenarios were to be added (cf., left side of diagram).

It must be noted that using Countywide average traffic congestion as the only measurement unit is a very crude approach to a complex situation. Other more detailed analyses have been performed by Planning Department staff, which are not all described in this CGPS report. The virtue of the Countywide average approach is that of simplicity. It provides a relatively easily understood gaming board, with which to conduct a public discussion that can wander off down byways of detail, but still retain a framework to keep the discussion from disintegrating into chaos, due to the complexity of the factors and measurements. Some general conclusions can be drawn from Figure 1.7, even although, like medical X-rays, the interpretation requires some skill and knowledge, and remains to a degree debatable.

Pattern vs. Proportion and Pace

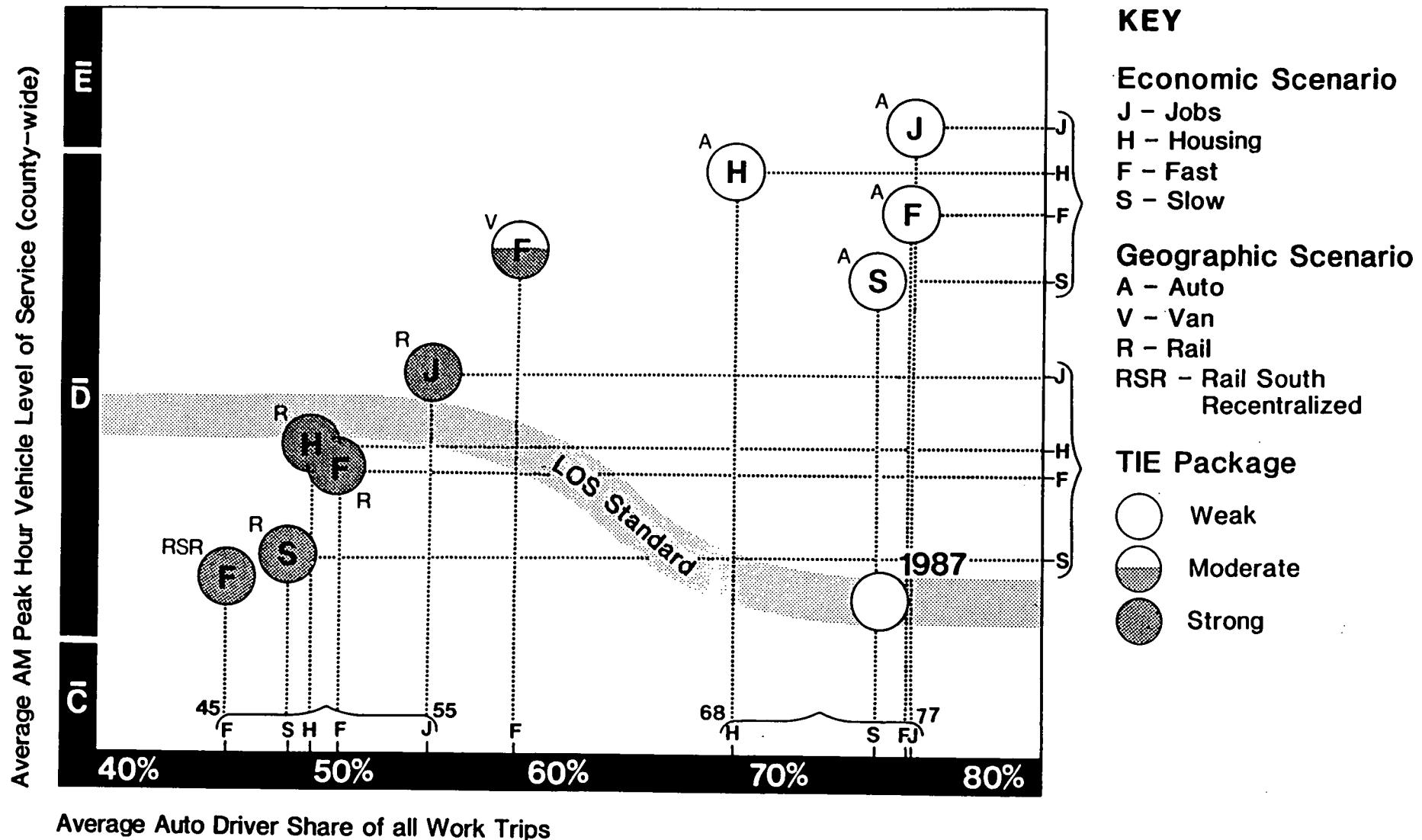
The most prominent result is that all the AUTO scenarios show unacceptably high levels of traffic congestion, regardless of their economic composition in terms of numbers of jobs and housing units. By contrast, almost all the RAIL scenarios show levels of traffic congestion within the range of acceptability. It seems clear

TRAFFIC

EFFECTS OF ALTERNATIVE SCENARIOS

Montgomery County Comprehensive Growth Policy Study

FIGURE 1.7



that, from a long term perspective, the *pattern* of urban growth (cf., AUTO vs. RAIL scenarios) is much more important than either the *pace* of growth (cf., FAST vs. SLOW scenarios) or the jobs to housing *proportion* of growth (cf., JOBS vs. HOUSING scenarios). Although control over the timing of growth is important (especially from a fiscal perspective), control over the spatial and infrastructure pattern is far more important in the long run. Ultimately, zoning and facility location are more important than staging, insofar as traffic congestion is concerned.

Auto Driver Share of Work Trips

A corollary conclusion is that the auto driver share of all work trips must be reduced from its present level of 75 percent to somewhere in the vicinity of 50 percent, if the County expects to accommodate new growth in the long term up to the levels shown in these scenarios, without exceeding reasonable levels of traffic congestion. Exactly how this reduction in auto driver share could be accomplished will need further careful planning analysis, but both the general direction and the approximate target level are revealed clearly by this diagram.

Volume 2, in Chapters 3, 4, and 10, describes some of the questions that yet need to be answered with respect to the feasibility and cost effectiveness of light rail as the principal thrust of new transit capacity versus carpools, vanpools, and buses. But whatever emerges as the best strategic mix of transportation mechanisms to substitute

for the lone occupancy vehicle (LOV), it is clear that today's dominant travel behavior patterns must change dramatically over time if long term growth is to be absorbed without gridlock in at least some areas.

Proportion of Jobs to Housing Units

An interesting result of the TRAVEL model tests is that, under both the AUTO and RAIL geographic patterns, the FAST economic scenario shows less traffic congestion than the JOBS scenarios, yet the FAST scenario contains the same number of jobs as the JOBS scenario, but has 150,000 more housing units. Since the transportation network (under either the AUTO or RAIL pattern), also is the same for both the JOBS and the FAST scenarios, the reduction in traffic congestion from JOBS to FAST must be due to the shift in location of the 150,000 housing units (i.e., from outside the County to within the County).

Staff speculates that this result is due to the fact that in the JOBS scenario, workers from exurbia have relatively long travel paths through the County on already congested freeways and arterials, whereas, in the FAST scenario, the trips to the same jobs from housing units within the County are shorter and less heavily dependent on the freeway and arterial roadways. Staff also cautions, however, that this effect may occur only under certain specific conditions, such as the extra housing being clustered near employment centers, and made available at a price range that corresponds, to some reasonable degree, to the wage structure of the employment locations.

Pattern and Price

It must be noted that the TRAVEL model is calibrated on the relative housing price structure of the metropolitan region as it exists today; and that, at present, it cannot simulate well the traffic outcome of major changes in relative housing price structure. If more precise analysis of this relationship is desired, further research is necessary in this area, including the assembling of a data base on relative housing prices by subareas of the region, and relative wage structures by employment areas within the region.

Pattern versus Pace

The relatively small difference in traffic congestion between the SLOW and FAST scenarios, in spite of the fact that the SLOW scenario contains only about a third as much new growth as the FAST scenario, seems to be due primarily to the effect of trips generated by growth in the surrounding jurisdictions. The TRAVEL model test of the SLOW scenario assumed that the rest of the region would not be able or willing to slow its growth rate to the same level as Montgomery County. This test used the TREND scenario assumptions for these other jurisdictions.

The result suggests that a jurisdiction which can keep its growth rate below its neighbors probably would benefit from reduced congestion, if the differences between the levels of growth in the jurisdictions were not too great. As the discrepancy in relative amounts of development

between the adjacent jurisdictions and the controlled one becomes very large, however, the relative leverage over traffic congestion that accrues from the controls within the one jurisdiction probably becomes less significant.

Regional Growth Pattern

Stating the above observation another way, the effectiveness over traffic congestion of Montgomery County's growth controls is likely to become relatively less effective if very large amounts of growth leapfrog past its borders into the exurban counties.

Testing the scenarios on the TRAVEL model reveals how sensitive the traffic congestion within the County will be in the future to the pattern of growth in the exurban ring of counties, as well as to the adjacent suburban counties and the District of Columbia. Over most of the past 30 years, the outer boundaries of Montgomery County were beyond the outer edge of the region's economic growth pressure. This will not be true in the next 30 years. Strategic planning should recognize this fact and respond to it.

Scenario Analysis Conclusions

Reflecting on these and other implications of the TRAVEL model tests of the scenarios has led staff to the conclusion that the answer to the question of whether we can grow without excessive traffic congestion is a

qualified "yes." The study results suggest the conditions under which a yes answer is justified.

Basically, these conditions spring from the need to reduce the proportion of auto driver work trips from today's 75 percent to something closer to 50 percent. The necessary goal seems to be to achieve balance between the auto drivers and the non-auto drivers. Although very ambitious by today's behavior patterns, this goal may be the touchstone against which future long term transportation efforts should be assessed. If this goal were to be accepted, action in three other general directions would seem necessary to move towards it, as outlined below.

(1) New Travel Networks

Building out the Master Plan of Highways will not provide enough capacity to accommodate growth over the next 30 years at a level equal to or greater than that of the past 30 years. With a fixed supply of roadways, more person trips can only be accommodated by increasing the number of persons per vehicle, once the maximum vehicle/roadway ratio has been reached.

The process of using vehicles more efficiently can be greatly enhanced by rubber tire strategies such as carpooling, vanpooling, and bus route expansion, but probably more rail facilities also will be necessary. Car pools can carry as much as three times the number of persons per lane of roadway as lone occupancy (LOV)

vehicles, but light rail cars can carry up to ten times more per lane.

Future planning must determine what is the best combination of carpooling, vanpooling, bus, and rail extensions to serve the County's needs. Whatever the combination, all of these forms of collective travel require dedicated rights-of-way, to provide a separate travel path from that of the general automobile and truck traffic flow. Without the time and convenience advantage that accrues from this separate pathway (and that overcomes the perceived disadvantages of waiting for service and sharing a vehicle with others), people will not easily change their travel behavior away from the LOV. Therefore, whatever combination of new transportation technologies turn out to be most cost-effective, a network of new travel paths, separate from the general purpose roadways, will be necessary for them to be effective in reducing traffic capacity.

These new pathways will not be adequate to the problem unless they are extensive and interconnected. Only a system that offers a dependable service to multiple destination points will do the job well enough. Isolated links here and there will help, but ultimately it is the connectivity of the entire system that must build to a level of "critical mass," in order to accomplish the major shift in travel behavior that appears necessary to accompany the level of long term growth assumed in these scenarios.

(2) Clustered Land Uses

Inserting new transportation infrastructure to serve the urban envelope designated by the General Plan will not be enough by itself. Unless new growth is clustered at nodal points convenient to the new travel network, people will not use the new network enough to justify its cost. To accomplish this land use concentration, zoning patterns will need to be adjusted. This will not be an easy task.

Homeowners near areas targeted for intensification as new "urban villages" may protest. Landowners in other areas, downzoned to maintain an overall control total for jobs and housing units, may protest. Developers may argue that the common wisdom of the economic marketplace prevents investment in structured parking and higher density buildings. All may choose to take their challenges to court.

Whatever may be the pragmatic outcome in the real world, the strong logic of this CGPS analysis is that land use intensification should accompany any transportation strategy that seeks to reduce the auto driver proportion of the work trip by providing alternative means of travel. Without the private land use pattern reinforcing the public infrastructure pattern, the travel behavior objective is unlikely to be achieved.

With regard to the proportion between housing and jobs, it must be noted that any jurisdiction within any metropolitan area will end up importing some workers

and exporting some others, regardless of the resident worker to job ratio. The more that the wage structure of the County's employment locations is out of symmetry with the price structure of the housing nearby, the more likely it will be that the travel volume created by the import/export exchange will be high.

Nevertheless, the scenario evaluation suggests that the best mix from an overall perspective probably is the one that many people intuitively find attractive, namely a one-to-one ratio of resident jobs to resident workers. Admitting that the state of the art is relatively low in terms of thoroughly understanding the wage/price relationships between employment and housing locations, preliminary indications still suggest that, in the absence of arguments for any other numerical goal, a balanced one-to-one ratio of resident workers to resident jobs remains the best target to aim at from a traffic congestion perspective.

The implication of this proportional goal (derived solely, thus far, from a traffic congestion perspective), is to reinforce another popular concept, one that springs from a sociological concern, namely that central business districts and other major employment centers should have housing in close proximity to them. The premise here is that these areas should function as full service centers, with a sense of "place" and some human activity on the streets at night.

The term "urban village" is frequently applied to this concept of suburban mixed use activity centers. While in

a sense constituting an oxymoron, this term seems to represent the desire to combine the human scale and sense of community, which the term "village" connotes, with the range of activities and opportunities which the term "urban" connotes. For better or worse, overcoming our future travel problems seems to lead directly towards the urban design challenges inherent in the "urban village" concept.

(3) Transit Incentives and Enhancements (TIE)

Even if new infrastructure and concentrated land use patterns were to be created, uncertainties would remain with regard to travel behavior. Not only is the private automobile, with its plush interior, air conditioning, stereo, and image of freedom and control, inherently attractive, it also is supported by a long standing advertising campaign and a large subsidy program from both government and industry. The 75-year trend towards ever more cars has great momentum.

The elements identified in the TIE package are some of the actions that could be taken to help people break the automobile habit, specifically those that shift the pricing structure to a more equal relationship between automobiles and transit, and those that promote pedestrian friendly urban design at the micro-scale. (See also Volume 4, Appendix 5.) Without a significant effort in the direction of the strong TIE package, other efforts in providing new infrastructure and land use concentration probably will not be fully effective.

In summary, overcoming the travel problems revealed by the scenario analysis seems to point directly in at least three major directions: (1) the introduction of new travel networks, (2) the clustering of land uses at points along these networks, within an overall Countywide balanced J/H ratio, and (3) the establishment of conditions that help people break the automobile habit.

Section D: OTHER KINDS OF CONGESTION

Water, Sewage, Parks, and Open Space

After the transportation network, the two other public infrastructure systems that have the greatest effect on urban form are the water supply and sewage treatment systems, and the stream valley park and open space system. Volume 2 analyzes the water and sewerage system needs for the next 30 years, and concludes that a serious problem in locating and building a major new sewage treatment plant, with connecting trunk sewer lines, will need to be solved by about the year 2000 or a little later. Although solving this problem will require an interjurisdictional approach, and may prove to be very difficult, there appears to be no intrinsic technological reason why it cannot be resolved if serious planning and coordination efforts are begun in the near future.

With one of the best park and open space programs in the nation, including the preservation of the wedge areas of the General Plan, under the Agricultural Preservation Plan and the Transferable Development Rights Program, the County is fairly well protected from excess-

sive pollution/congestion burdens insofar as natural resources at the macro-scale are concerned. Other environmental protection programs at the micro-scale (e.g., stormwater retention, tree preservation, etc.) will need to be maintained and enhanced, but the threat to the County's natural resource systems that is posed by any of the growth scenarios seems much less than that to the mobility system discussed in the preceding section. This CGPS report, therefore, does not dwell in any great detail on matters of environmental protection, although recognizing fully the strategic importance of this factor.

Schools

Congestion in schools is naturally a sensitive issue in a County that prides itself on a tradition of excellence in public education. However, because schools occupy relatively little land, and usually can be built within several years if necessary, the question of whether school capacity can keep up with future growth demands tends to become primarily a function of fiscal resources.

The location of schools has relatively little impact on traffic congestion, although they obviously would be more convenient to pupils if they were accessible by transit. So long as the Board of Education continues to maintain its large bus fleet to transport students, which appears to be a necessary condition in the absence of an ubiquitous transit system that could provide substitute transportation for school children, school location will continue to be determined more by educational and

neighborhood service criteria than by macro-scale, travel-based growth management criteria. Therefore, this study has dealt with schools primarily with regard to their implications for fiscal policy.

Section E: REGIONAL NATURAL RESOURCE ISSUES

Unlike the water, sewer, and open space matters mentioned above, other natural resource matters appear to present serious problems. Volume 3, *Global Factors*, addresses three topics in this category: (1) air quality, (2) the greenhouse effect, and (3) petroleum dependency. The material in Volume 3 represents an effort to survey the best available expert opinion about the future prospects of a number of various factors which operate at national and global scale. Such factors will impact Montgomery County along with the rest of the region, and should be considered in any comprehensive approach to growth policy. The following three sections are extracts from Volume 3. The opinions expressed in these three sections are those of the consultants who were commissioned to collect this information and write Volume 3.

Air Quality

Although air quality has improved significantly over the past decade, pollution is still a serious problem. The Washington metropolitan area has yet to meet Federal Clean Air Standards.

Air quality is linked to the burning of fossil fuels, as are two of the other greatest threats to the United States, petroleum dependency and the greenhouse effect. The Federal government does not recognize this interdependency; any legislation will probably address the three threats independently instead of holistically.

Technology exists to virtually eliminate most common air pollutants, although it's not being used and probably won't be until Federal legislation spurs application of that technology. Congress knows how badly clean air is needed, but fierce controversy has kept legislation from being passed. Within 10-20 years, however, we are likely to have national laws that profoundly affect how people live, work, and travel.

Air quality does not respect jurisdictional boundaries, and, according to the Urban Land Institute, air quality legislation will trigger regional growth management.

The County can try to avoid national and regional control and maintain its independence by managing air pollution locally. There are at least four solutions:

1. Reduce harmful emissions per vehicle. Cars and trucks that get more miles per gallon or use non-polluting power would help solve air quality problems.
2. Use transit and transportation management to get cars off of the road. To be more than marginally effective, this would have to be combined with transit-serviceable land uses.

3. Encourage home-based work to reduce commuting.
4. Use pollution "offset," where a developer offsets the amount of air pollution his project would cause by reducing air pollution an equal amount elsewhere. This could become part of the AGP as public health (including air quality) becomes a limit to growth.

Any County policy that comprehensively addresses air quality, especially one that encourages transit-serviceable land uses, will have to balance conflicting objectives. An appropriate forum for weighing those objectives is the comprehensive planning process, which could also study the interrelationships between air quality, petroleum dependency, the greenhouse effect, and traffic congestion.

The Greenhouse Effect

When certain gases, many from man-made sources, build up in the atmosphere, they trap the earth's heat, thus raising temperatures and altering the entire world's climate. Most scientists say that the global warming resulting from man's acceleration of this "greenhouse effect" is a severe environmental threat, while others dispute the data showing warming trends.

A major man-made cause of the greenhouse effect is burning gas, oil, and coal; in Montgomery County the main culprit is the motor vehicle. This problem will probably get worse: the number of vehicles registered

in the County is forecast to climb from 543,000 in 1986 to over 800,000 in 2010.

Congress has requested major studies from the Environmental Protection Agency and is already introducing and debating bills aimed at controlling the greenhouse effect. One of those bills, co-sponsored by Montgomery County Congresswoman Constance Morella, cuts energy use by: increasing car and truck mileage standards, funding research on solar and other renewable energy sources, requiring state energy conservation plans, setting efficiency standards for Federal buildings, banning non-recyclable materials, and by encouraging tree planting, especially in urban areas. Although that bill probably won't be passed in its present form, some Congressional action is likely.

Most planning issues and potential County policy responses to major congressional legislation relate to the motor vehicle and its impact on patterns of land use and transportation. Fruitful policy goals would be compact, transit-serviceable land uses, energy conservation, and getting people out of individual cars and into buses, trains, and carpools. These measures to control the greenhouse effect are also effective solutions to air pollution, petroleum dependency, and traffic congestion.

Montgomery County's Agricultural Reserve and extraordinary amount of parkland, which protect 40 percent of the County, significantly contribute to moderating the greenhouse effect through vegetation and trees that absorb harmful gases. Planning policy can further

moderate the greenhouse effect with tree protection legislation and by resisting market pressure to develop the wedges with low-density development, which cannot be served by transit and destroys trees.

Petroleum Dependency

A major public policy issue for the coming decade is what to do about America's increasing dependence on foreign oil.

The U.S. is very vulnerable to oil shortages. We are more dependent on petroleum than other countries are because of our reliance on cars for transportation. In the U.S., 82 percent of urban person-trips are made by car, versus an average of only 42 percent by car in 10 other industrialized countries. The federal government has not moved as decisively as other western nations to control automobile use, the primary consumer of petroleum. Only 5 percent of world oil reserves are within the U.S., forcing us to rely on foreign oil.

The world will run out of petroleum as a source of motive power within a century. In the long term, therefore, alternative vehicle fuels are vital. In the short term, reducing use of petroleum will buffer us from shortages.

What are the implications for Montgomery County? If no petroleum crisis occurs between now and 2010, or if cars that use little or no petroleum become widely used, planning for Montgomery County will have to address the increasing numbers of motor vehicles on the roads.

If a crisis does occur, Montgomery County will have to cope.

The County is in a better position to weather sudden gas shortages than are most other urban areas in America. Although the County is decidedly auto-oriented and becoming more so, we have land-use patterns (compact, mixed uses; jobs near housing) that allow non-car travel. We also have better-than-average public transit, and land use and transportation patterns that will support more transit.

Montgomery County can increase its capacity for coping with possible petroleum shortages with public policies that reduce the need to drive cars. The most fruitful planning policy would maintain current patterns of transit-accessible, compact, mixed land uses. This policy would have to buck the current market pressure to spread the hundreds of thousands of new housing units and new jobs expected by the year 2010 throughout undeveloped sections of the County at low densities.

Natural Resource Conclusions

Media attention shifted away from environmental issues during the 1980's, but the problems have remained and are now being rediscovered. Last year Time magazine featured a picture of a bandaged earth as its cover story on environmental issues, and the Prime Minister of Great Britain hosted an international congress on air quality problems such as the greenhouse effect and acid rain. Political turbulence in the Middle East could quick-

ly bring petroleum dependence back into the spotlight at any time.

Staff discussion with consultants and experts on these topics suggests that public awareness of the growing severity of these problems will continue to grow, and that it probably will find expression at the local government level as much or more than it will at state or federal level.

The common feature of all these global natural resource factors is their focus on the automobile as the primary source of the problem, at least insofar as Montgomery County and the Washington Metropolitan area are concerned. Staff concludes that the logical response to these natural resource problems is the same as the logical response to the local traffic congestion problems outlined in the preceding sections above.

Section F: TECHNOLOGICAL TRENDS

Volume 3 also covers three technological trends that are relevant to the question of future travel behavior: (1) private vehicle transportation innovations, (2) telecommuting and home based work, and (3) tiltrotor aircraft. The following three sections are extracts from Volume 3. The opinions expressed in these three sections are those of the consultants who were commissioned to collect this information and write Volume 3.

Private Vehicle Transportation Innovations

A sizable amount of research on automotive technology, spurred by the first 1970s energy crisis, has perfected private cars that get up to 100 m.p.g. of gasoline. Technological advances that increase fuel efficiency, such as continually variable transmissions, are starting to appear on new cars. Several ways to further increase fuel efficiency are being studied, such as less-wasteful engine idling and reduced tire drag.

There hasn't been much change in cars on the road, however, because of low consumer demand for more efficient cars (gas costs are less important than costs of repairs and insurance). The federal government has also reduced m.p.g. standards for new cars. While remarkable increases in fuel economy are within our grasp, pressure to implement them is waning.

All indications are that we will have gas powered vehicles well into the next century. The costs of owning and operating cars are expected to drop while numbers of cars are expected to climb faster than numbers of people.

In Montgomery County, the projection is for more cars that are used more. Two County trends are expected to continue: increasing numbers of multiple-car households, and increasing dispersion of both jobs and homes.

That means more cars, more traffic, more congestion,

and more pollution. To deal with such increases, the County needs traffic alleviation measures. We are already using some "administrative" tactics like park-and-ride lots, planning for HOV lanes, and car pool services. Making the physical land use pattern more conducive to alternative commuting will be more effective.

Current County policy regarding transit serviceability is evolving and inconsistent. Policy needs to be more consistent, and transit serviceability belongs in each master plan and sector plan review. Suggested strategies to enhance transit serviceability are: cluster development around rail stops, retrofit job centers, mix land uses, design new subdivisions to be more transit-accessible, and use a "Transfer of Development Rights"-type program to cluster development in transit-serviceable locations.

Telecommuting and Home Based Work

The number of people working out of their homes instead of traveling to a workplace every day is rising rapidly, and the future growth potential is great. There are essentially four kinds of people working at home: home business operators, freelancers, corporate employees working after hours at home, and established corporate telecommuters. Telecommuting and home based work can reduce traffic and alleviate congestion, improve air quality, and save money on offices and related services. The potential to reduce congestion is so great that California has started an experimental pro-

gram using home based work with a target of removing three million car trips from Los Angeles by the year 2010.

In Montgomery County, home based work is appealing as a planning option. It's also appropriate for County workers, who fit all the profiles of home based workers. A preliminary study of new employment in Silver Spring estimated that encouraging home based work would reduce peak hour vehicle trips between 3 and 10 percent.

The Federal government, Montgomery County's largest employer, is a prime candidate for a telecommuter program because of its current mandate to lower office costs and to reduce the amount of office space per employee.

A large number of home based workers in the County would cause negative effects, too. Office construction would decline, costing the County millions of tax dollars. The County would also lose other business-related taxes. Overall, there is not enough data to say whether Montgomery County would win or lose.

Neighborhoods could change if many people telecommuted or worked in cottage industries. There would be more people around during the day, more traffic through the neighborhoods, and prices could rise as people had extra income to spend on a house.

The County is now examining zoning regulations on home employment. Potential neighborhood changes in

the event of a large increase in home based work make the ongoing zoning revisions especially important.

By the year 2010, 20 percent of the workforce could be telecommuting or working in home based businesses. This is a major trend for the comprehensive plan to review. Currently there is no information on the subject, but pertinent questions can be included in the County Office of Management and Budget's resident survey, M-NCPPC's EMME2 calibration study, or MCDOT's transportation demand management program.

Tiltrotor Aircraft and Montgomery County

Tiltrotor aircraft, a hybrid between helicopters and airplanes that takes off vertically and carries as many people as a bus, doesn't need major airports or runways. This fast, agile, and mechanically uncomplicated aircraft offers a solution to one of the most serious public facility problems of both the U.S. and western Europe: airport congestion. U.S. armed forces and civilian aircraft companies are working together to develop functional tiltrotors. According to their published timetable, the military will begin using tiltrotors in 1992, and commercial passenger service will start sometime between 2000 and 2010. It seems clear that tiltrotor shuttles will be flying between Washington, D.C., and New York City by 2010.

Will there be a market demand for "vertiports" in Montgomery County? Government and industry see the main commercial application of tiltrotors as business

travelers, and a principal market as the corridor between Boston and Washington, D.C. Studies predict the largest numbers of riders in the Washington metropolitan area will come from northern Virginia and downtown D.C., although Montgomery County is also a logical place for a vertiport.

What kind of a site would be best for a vertiport in Montgomery County? To attract the most riders, a good site should be close to Bethesda, Northwest D.C., and the I-270 corridor, and be accessible by Metrorail and the Interstate highway system. About 5–12 acres are needed; more than half of that will be for parking. Tiltrotor aircraft are much quieter and safer than helicopters, but the noise levels adjacent to a vertiport are still too high for a residential area. Suitable neighbors for a vertiport are commercial and industrial uses. The area south of I-370 near the Shady Grove Metro station seems ideal.

One way to have a vertiport ready and waiting when commercial service becomes feasible is to build a heliport that can also accommodate tiltrotors. That may be a particularly good idea for Montgomery County as a helicopter base is needed in the Shady Grove area by 2010.

The Metropolitan Washington Council of Governments is thoroughly investigating tiltrotor facilities, including combined helicopter/tiltrotor ports.

Technological Conclusions

Apparently the technology already exists to drastically reduce the effect of automobile emissions on air quality, and to dramatically reduce average automobile fuel consumption. If such a major automobile fleet conversion were to be made in the 1990's, it could go a long way towards resolving this region's air quality and petroleum dependency problems. The question is whether it will be done. At present the prospects appear unlikely, due to a lack of cohesive leadership and agreement at the national level, which is the only level at which the necessary coordination can take place to ensure the achievement of such a technological revolution.

The telecommuting technology presents a different prospect. Montgomery County has an economic and demographic profile that fits well to the opportunities presented by this technology. In Volume 2, Chapter 5, consultants suggest that it is conceivable that as much as 20 percent of the workforce could be telecommuting or working in home based businesses by the year 2010. However, this chapter also cautions that there are many down-sides to home based work, and many uncertainties about how effective it really will become.

Because there is so little experience with the effects of this technology on travel behavior, prudence dictates that further research and observation be undertaken as time goes on, and that, for the present, no more than a 10 percent reduction in commuting be considered as an outside estimate for policy purposes. Under such an as-

sumption, all of the preceding conclusions with regard to the need to reduce the auto driver share of work trips remain valid. Although telecommuting appears to be an evolutionary trend of importance, it does not appear at this time that it will be revolutionary in terms of impact on travel behavior.

Tiltrotor technology, while likely to be significant in terms of inter-city travel, and helpful in reducing ground travel times for those using airplanes, is not likely to have any major impact on daily commuting and local growth management issues. Strategically, however, the County's Wedges and Corridors plan can be well served by the development of tiltrotor airports at key locations to serve the I-270 corridor. From the perspective of providing convenient linkages between employment locations in the County and businesses in other cities, and thereby enhancing the attractiveness of the County for high technology businesses, the addition of a tiltrotor airport in the near future seems desirable.

An additional technological topic was addressed as part of this study, concerning the application of electronic devices to automobiles. Called "Smart Car/Highway Technology," this consultant's evaluation of the state of the art is contained in Volume 4, Appendix 3. It explains that small car/high technology breaks down into two functional areas, one in the area of driver information systems and the other in the area of linking automobiles together at high speed. The first helps to smooth out local traffic congestion by providing advance information and alternate route maps to drivers. The second in-

creases the capacity of roadways by increasing the speed of the vehicles as they are coupled together at close headways and directed by automatic electronic controls. The conclusion is that driver information services will be available by the year 2000, but that roadway automation will not be widespread for at least 40 years or more.

As a generalization, driver information systems possibly could increase road capacity by as much as 10 percent, by inducing driver behavior changes including trip shifting to lesser utilized facilities, less congested travel times, and ridesharing options enhanced by real time carpool matching information. But caution should be exercised that gains from this technology are not overestimated or double counted against traffic mitigation techniques. It is noted also that the potential for shifting traffic to lesser utilized facilities is more limited in Montgomery County than in areas with well developed multilane arterial grids with mile or half mile spacings. Therefore, a more reasonable outside possibility for Montgomery County is a 5 percent gain in capacity from this technology, not beginning until after the year 2000.

With regard to automatic highways, the possibility of getting major capacity gains by this means does not apply to the urbanized conditions of Montgomery County. Highway automation requires grade separated roadways and only makes sense to serve long distance trips. If grade separated HOV lanes were to be constructed that are also buffered from mixed flow traffic, there is some possibility of automation effectiveness. But, be-

cause it is so difficult to insert new grade separated rights-of-way into the already urbanized fabric of the County, the opportunity to achieve any real gains from highway automation seems very remote.

Section G: SUMMARY

Can we grow without excessive congestion?

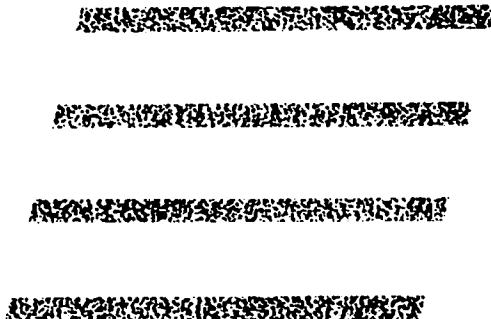
Yes, but only under certain conditions.

Basically, the number of cars on the roads must be managed somehow (e.g., set a goal of reducing the average auto driver share of work trips from 75 percent to 50 percent).

To accomplish such a goal, we would need to:

- (a) introduce new travel networks (trolley, van, and hiker/ biker trails);
- (b) cluster land uses at points along these networks (urban village centers); and
- (c) take actions to help people break the automobile habit (auto/transit pricing and pedestrian friendly design).

Chapter 2



CHAPTER 2: THE AFFORDABILITY ISSUE

Section A: THE QUESTION IN PERSPECTIVE

Can we afford the costs of growth?

What does it mean to be able to afford something? Usually, an affordable item is one that can be paid for out of income, without unduly sacrificing other goods and services which also must be paid for out of this same income. Like traffic, it can be thought of in terms of a congestion metaphor. When one's available income becomes overcrowded with the aggregate cost of needed items, the acceptable cost revenue ratio has been exceeded, and excessive "congestion" has occurred.

One question for fiscal analysis is how do fiscal limits relate to other limits, such as physical or temporal limits? If time is money, at what point does the fiscal accounting system need to find a way to cross over into a time accounting system, and allow for explicit measurements in both dimensions? The growth management problem of relating traffic congestion to fiscal congestion begins to require this kind of thinking, especially when the journey to work occupies such a pivotal point in everybody's daily cycle, a point where time becomes very precious. Staff suggests that part of the reason for the political pressure to control growth may be arising from two-wage-earner families with overstressed daily calendars, who are reaching the limits of the amount of time they feel they can afford to spend in commuting. In thirty years, might Montgomery residents be willing to

spend more money on taxes if it could save them precious time?

Affordability obviously is an issue from more perspectives than the fiscal one, and with regard to more benchmarks than the tax burden. One of the most topical of these other perspectives is the question of housing affordability. Economists have invented the Housing Affordability Index, which can chart the changes that occur in the relationship between median annual household income and the annual debt service necessary to buy the median priced housing unit on the market. Like any statistical index of this nature, there remain subsidiary questions as to whether the measure of central tendency used, (i.e., the median), is an adequate representative of the conditions prevailing among the lowest or highest sub-groups in the scale. What may be more important in a growth policy discussion is what level of responsibility the local government should assume for managing affairs so that housing prices do not exceed some socially desirable level.

The forces that affect housing prices, although not totally mysterious, are nevertheless quite complex. This CGPS exercise engaged a team of consultants from the universities of Harvard and Pennsylvania to examine whether any conclusions can be drawn at the present time with regard to the effect on housing prices of growth management controls and other related supply and demand factors. Their report says that there is at

present no perfected or applied model that can simulate the workings of the economic forces of a regional or local land market with any degree of reliability. These consultants are working at the edge of the state of the art in this field and hope to use data from the Planning Commission records to develop some better understanding of this problem over the next year or so.

In the meantime, circumstantial and anecdotal information is frequently repeated to suggest that the growth controls in Montgomery County do play a major role in the increases in the average price of housing that have occurred in the past decade.

Evidence from other perspectives does not seem to bear out this thesis. For example, it may be useful to compare recent housing prices in Montgomery County with those in Fairfax County. As is well known, the Fairfax County government has not been able, because of limited legal authority, or willing, because of prevailing political sentiment, to establish a growth management system that would limit new development to the holding capacity of its programmed infrastructure. In recent years, it has grown even faster than Montgomery County, and currently it is seriously examining various ways to raise revenue to pay for new infrastructure, especially to ease some serious transportation problems that have developed.

A recent article in the Washingtonian Magazine (April 1989) listed the average sales price for both new and existing homes (in the third quarter of 1988) for

Montgomery County at \$206,100, and for Fairfax County at \$207,500. A more recent survey of new single family home prices showed Montgomery County with an average price of \$215,700 and Fairfax County with an average price of \$240,600. The total volumes of sales in both counties are roughly the same (i.e., 26,100 in Montgomery County and 27,700 in Fairfax County in 1987), and the breakdown by structure type is also roughly the same (i.e., Montgomery with 49 percent single family detached versus Fairfax with 49 percent; Montgomery with 33 percent townhouse versus Fairfax with 39 percent; and Montgomery with 18 percent condominiums versus Fairfax with 12 percent).

It must be noted that prices do drop significantly when one moves from the suburban ring to the exurban ring. Average new home prices in Howard County are listed at \$136,100. But, this price differential seems more easily explained by the distance from employment factor than by the existence or absence of growth control measures. Similarly, from a national perspective, average housing prices in the Washington metropolitan rank about sixth in the nation, after San Francisco, New York, Boston, Los Angeles and San Diego. Given that the Washington area apparently has been one of the fastest growing employment centers in the nation in recent years, perhaps the internal economic forces within the region are not remarkably different from those that apply in other metropolitan areas of rapid employment growth. Whatever may emerge from further research on this subject, the question of affordability is complex and warrants thoughtful evaluation.

Section B: THE FISCAL MODEL

The flow of money is different from the flow of traffic. Monetary flow has very little concreteness, or mass. For example, the major cost component of local government, the school system, is heavily labor intensive. By comparison, the cost of the transportation system, at least in its automobile component, is far more capital intensive. Changes in relative wage levels, or pupil/teacher ratios, can have a major effect on the local budget that is unrelated to any commensurate change in the number, size, or location of school buildings. Fiscal outcomes are driven by a number of factors that land use policy does not normally address directly or in great detail.

From another perspective, many local government costs other than transportation are driven by interpersonal transactions that can fluctuate significantly over short time periods, as social demands change in response to felt needs that are not primarily determined by spatial relationships. Experience demonstrates that change in social behavior over time can be much more volatile than change in travel behavior (cf., health, crime, etc.). As a consequence of those differences, there is inherently much more uncertainty associated with fiscal modeling than with traffic modeling, especially for long time periods into the future.

Nevertheless, the question of whether urban growth is affordable in the long run must be addressed and, therefore, a fiscal model must be constructed. Volume 2, Chapter 7, describes the FISCAL model built especially

for this CGPS exercise. This model was constructed to allow the different scenarios to be compared with respect to their annual cost-revenue balances at a target budget year in the future (in this case, the year 2020). A number of elements were structured so that their input variables can be changed at will, allowing the model user to see the effect of alternative assumptions about key variables.

In this summary description, it is perhaps sufficient to note the following aspects of the way the FISCAL model was used in this exercise so far. It ignores the effects of inflation, and assumes constant dollars for all years into the future. It also assumes constant property and income tax rates, based on FY 1988. It divides the cost, or expenditure, elements of the County government into three divisions, called Transport, Schools and Other. It varies the cost of the first two for each scenario, based on a hand calculation of the transportation network and number of schools in each. It varies the cost of the Other services component based on average per capita or per household cost derived from the FY 1988 budget. Two other features worth special mention are: (a) the method by which school costs were developed, and (b) the method by which capital debt services was assigned to the target fiscal year's budget.

For schools, the calculation begins with an assumption about the structure type of the housing stock in each scenario. To this is applied a demographic model that estimates the age and size of the families that would occupy the housing units of that structure type at sequen-

tial years between now and the year 2020. It is assumed that the family size for different structure types in different subareas of the County will remain the same as today. The effect of this is that school costs in the fiscal tests of the scenarios are conditioned by the structure type composition assumed in the scenario (e.g., more apartments in the RAIL scenarios than in the AUTO scenarios results in fewer school children in the RAIL scenarios). Other tests can be run holding the total number of children constant, or in any other proportion.

Concerning debt service, the County typically sells bonds to finance major capital improvement projects, at interest rates that vary over time, and in different amounts from year to year. Estimating these fluctuating variables for 30 years into the future is an almost impossible task, because of the vast number of alternative permutations and combinations possible. To overcome this, an assumption was made that all of the new capital improvements necessary to build out the infrastructure assumption of each scenario could be paid for on an amortized basis (i.e., like a typical house mortgage), with equal payments spread over 30 years. It is recognized that this technique will underestimate the actual cost for capital improvements that will occur in years when the County must spend more on capital projects, in order to "catch up" with private sector growth that has "gotten ahead" of the government's public facility delivery schedule.

Two other variables proved to be so important, and yet so difficult to forecast for such a long period, that they

were applied twice to each scenario, in one case under what is called the "Sunny Prospect," and in the other case under what is called the "Stormy Prospect." These two variables are: (a) the degree to which the revenue base will appreciate in real value, and (b) the degree to which the state and federal governments will provide grant monies to the County, as well as engage in direct construction of infrastructure (e.g., state roads).

Section C: FISCAL EFFECTS OF SCENARIOS

Sunny Prospect versus Stormy Prospect

Figure 2.1 shows the results of applying the FISCAL model to eight scenarios, under the Sunny Prospect. Under this prospect, real income and property is assumed to increase in value, independent of inflation, by about 1 percent per year, which is the rate by which income has risen over the past decade. Also, under this prospect, the state is assumed to provide grants for school construction up to the level that the present legislative formula calls for, and both state and federal funding for transportation is assumed to return to the levels of the mid-1970's, when it was higher than it is today.

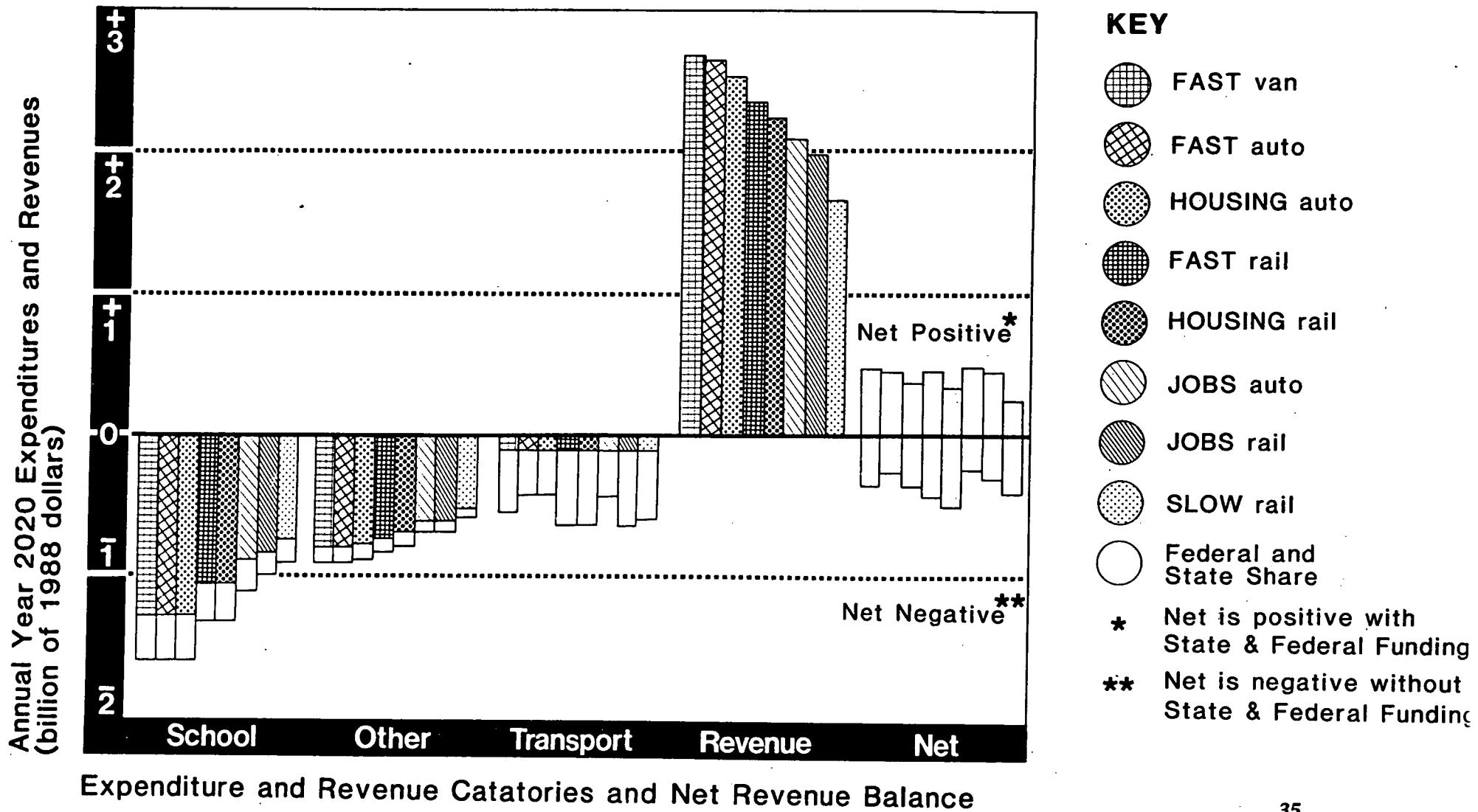
What is most noticeable is that all the scenarios show a significant net cost-revenue positive balance (i.e., about \$400,000,000) under these assumptions. What the "Net" bars, (i.e., with no hatching — on the right hand side of the chart), show is that all of this positive balance can be accounted for in terms of state and federal grants and direct construction of transportation facilities. It should

FISCAL (SUNNY PROSPECT)

EFFECTS OF ALTERNATIVE SCENARIOS

Montgomery County Comprehensive Growth Policy Study

FIGURE 2.1



be noted that, to simplify the picture, it was assumed that the County's budget would include the cost of all transportation facilities that the state normally would build directly by itself, and that the state would reimburse the County for this cost on the same annual amortization basis applied to the County's debt service. The depth of the extension of the "Net" bars below the break-even line reflects the degree to which the positive net balance would become negative if all the state and federal funds were withdrawn.

Figure 2.2 shows the result of changing the assumptions about real income and property appreciation and state and federal funding so as to change the Sunny Prospect to a Stormy Prospect. Under these conditions, income and property appreciation was assumed to be zero, and the level of state and federal funding assumed in the Sunny Prospect was cut in half. The effect is to change the approximately \$400,000,000 surplus into an approximately \$400,000,000 deficit. The unhatched portion of the "Net" bars shows the degree to which this deficit would increase if all of the remaining state and federal funding were to be withdrawn.

The Leverage of External Factors

The most obvious conclusion to be drawn from these two figures is that the leverage exercised by these two external factors is so large that it swamps the significance of any differences between individual scenarios with regard to different County growth assumptions. Also, in tax rate terms, the amount of varia-

tion between the Sunny and Stormy Prospects is very large. A \$400,000,000 annual difference on the tax base of the FAST scenario would be equal to one dollar in 1988 property tax rate terms, which is almost half of the 1988 rate of \$2.17 (which was held constant for the purpose of the FISCAL model tests).

It seems clear that the County's fiscal fate will be held hostage to these enormously influential external factors. Like a sailor in a small ship at sea, the County should spend time evaluating carefully the weather patterns that may help to predict the direction of these forces. Since real income appreciation is a function of increased productivity in one way or another, it is related to this region's, and nation's, relative competitive economic position in the global marketplace. It is inherently difficult to evaluate. Perhaps more time should be spent on strategic planning with regard to state and federal funding, where the County may have more opportunity to influence the course of events.

Auto and Rail Scenarios

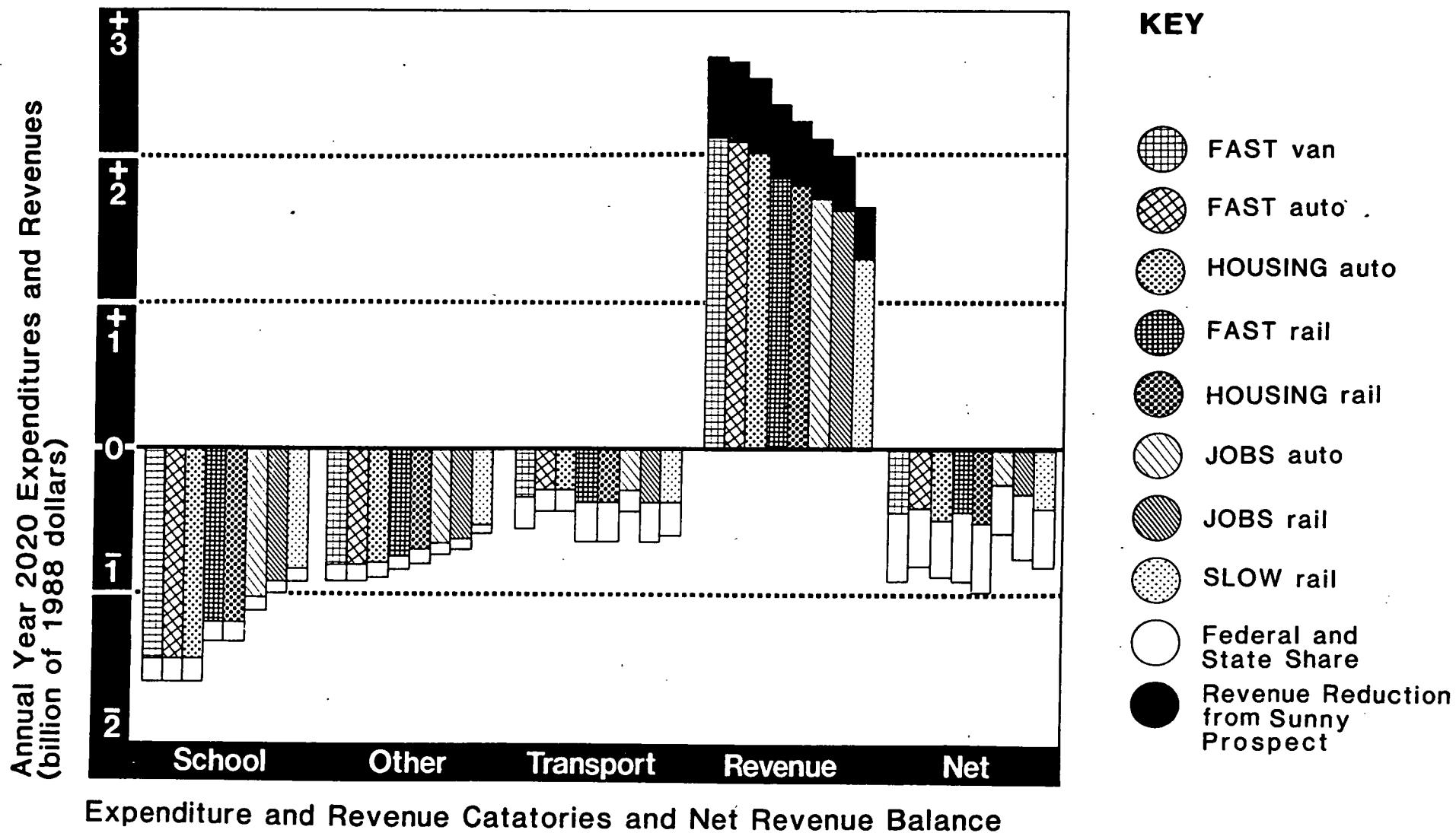
Figure 2.3 assumes a Hazy Prospect (i.e., combined effect of Sunny Prospect assumptions about income and property appreciation, and Stormy Prospect assumptions about state and federal funding) for the purpose of holding constant these two enormously influential external factors, and concentrating on the fiscal comparisons among different internal scenarios. It also increases the fiscal scale spatially so that the differences among the scenarios can be seen better, and it combines the fiscal

FISCAL (STORMY PROSPECT)

EFFECTS OF ALTERNATIVE SCENARIOS

Montgomery County Comprehensive Growth Policy Study

FIGURE 2.2

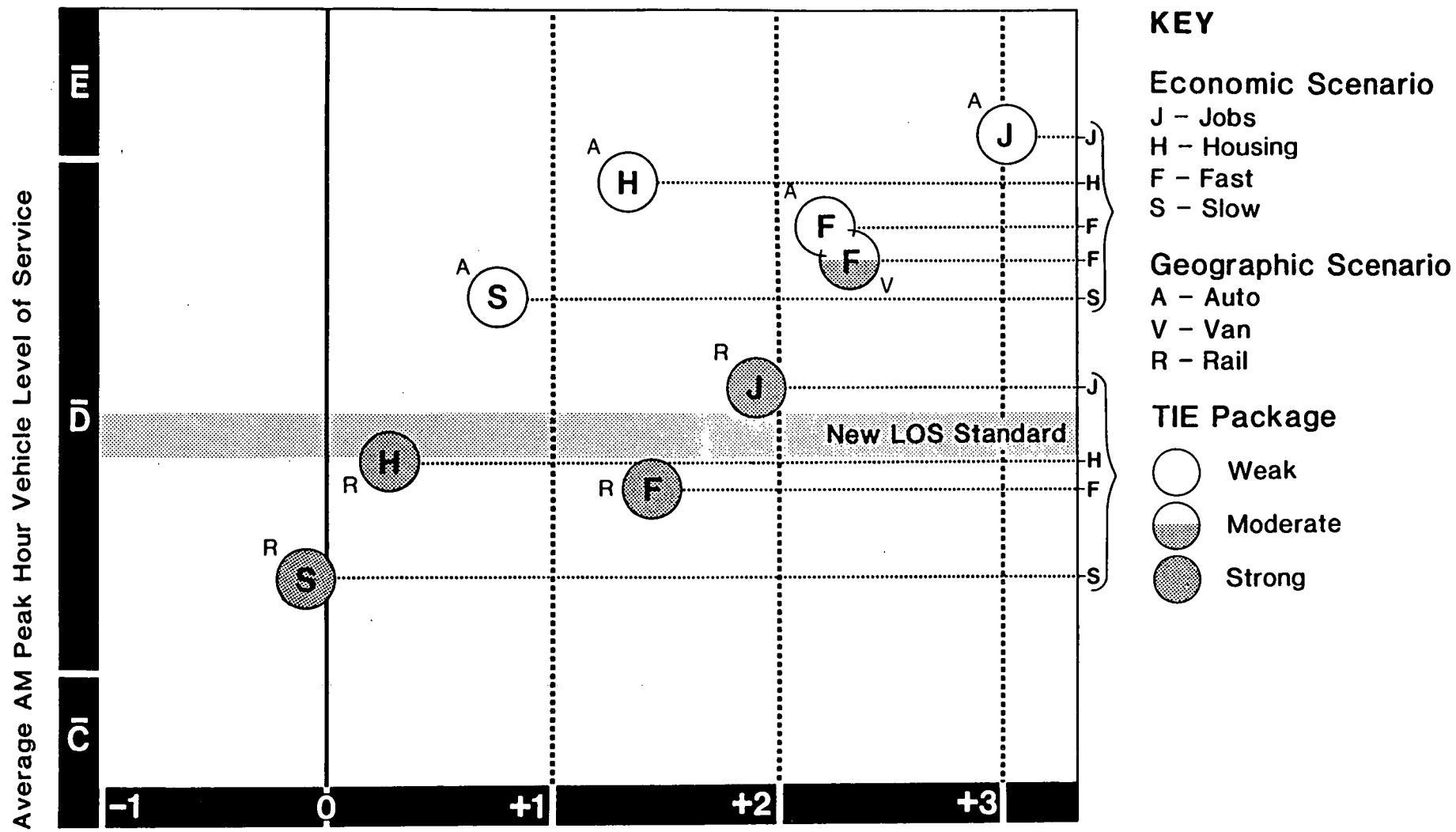


TRAFFIC/FISCAL (HAZY PROSPECT)*

EFFECTS OF ALTERNATIVE SCENARIOS

Montgomery County Comprehensive Growth Policy Study

FIGURE 2.3



* Combines Stormy Prospect Expenditure Assumptions with
Sunny Prospect Revenue Assumptions

measurement (on horizontal axis) with the traffic congestion measurement used in Chapter 1 (on vertical axis).

All the AUTO scenarios show a greater positive cost-revenue balance than the RAIL scenarios, by about \$100,000,000 on the average (i.e., about 25 cents on property tax rate). Presumably, this difference is due to the additional cost of the rail network. If the total number of school children were to be kept constant in both scenarios, this difference would be even more. Obviously the AUTO scenarios are more desirable from a fiscal perspective. The problem is that they are unacceptable from a traffic perspective.

If a line of central tendency were drawn through this set of scenarios, it would run from the lower left corner of the chart to the upper right hand corner. Such a line would help to clarify the general conclusion that what is good from a fiscal perspective generally is bad from a traffic perspective, and vice versa. How to find the "sweet spot" where the optimum balanced trade-off is reached between these two constraining forces clearly is the challenge for long term growth management. A great deal more research and analysis is still necessary before a precise location for this optimum spot can be targeted. Volume 2, Chapter 10 discusses further possible implications that may be drawn from Figure 2.3.

Section D: PROPORTION, LEVERAGE, AND RELATIVITY

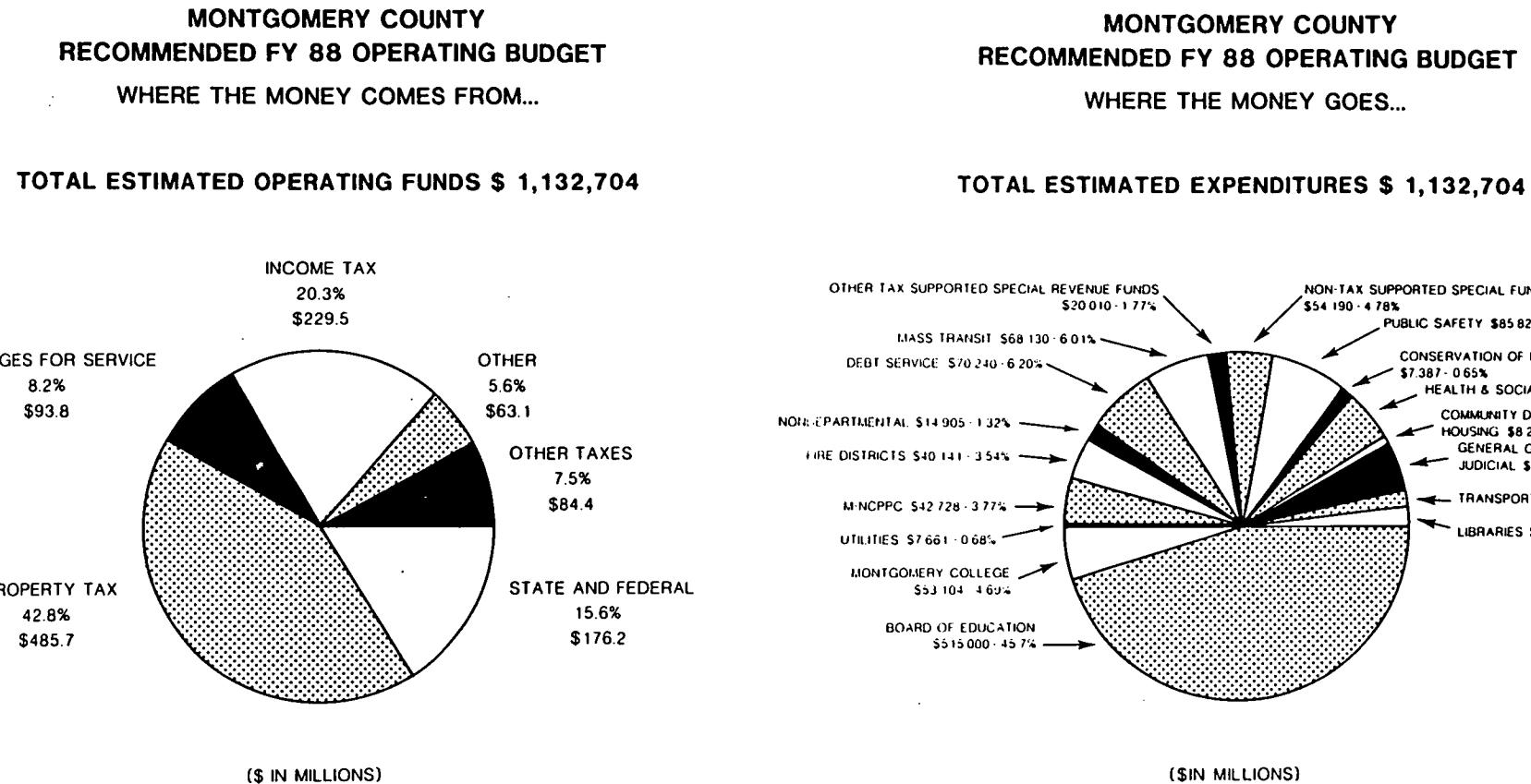
Revenue and Expenditures

Figure 2.4 shows the breakdown of revenues and expenditures for Montgomery County in FY 1988, which was the base year used for this study. In rounded proportions, Figure 2.4 shows that on the revenue side, about half of current total revenue is derived from the property tax and various service charges. Another 20 percent comes from the income tax pass-through from the state. About 15 percent comes from state and federal grants, and another 15 percent from miscellaneous other taxes and sources.

Similarly, Figure 2.4 shows that on the expenditure side, the total education budget, for the school system and the college combined, is about 50 percent of the total expenditures, with the other 50 percent divided up into a relatively large number of smaller categories. The largest of these, public safety, takes less than 8 percent of the total.

In simple terms, it is clear that the largest impact on revenue may be achieved through adjustment of the property tax rate. The income tax rate, and the percentage of increase or decrease in state and federal grant each have much less relative leverage. Similarly, the largest impact on expenditures may be achieved by small rate adjustments in the education component, (i.e.,

FIGURE 2.4



Note: General funds received by the County are applied to the appropriated Operating Budget, to current revenue funding of the Capital Improvements Program, and to certain other inter-fund transfers and non-appropriated uses. The display above shows the distribution of these funds to the appropriated operating budgets of County agencies. Therefore, the current revenue funding of the CIP and certain other uses are not included. State and Federal funds and Charges for Services are presumed to be applied directly to the programs to which they are related. The remainder of the chart is made up of that portion of Property Taxes, Income Taxes, and other funding that is applied to the appropriated Operating Budget.

pupil-teacher ratios, or hourly wage rates, etc.) with all the rest widely scattered over various functional services.

From a modeling perspective, it is useful to note that a small change in a factor that applies uniformly to a large base will create a much larger effect on the total than a large change in a factor applied uniformly to a small base. Thus, small changes in the property tax rate, and small changes in the per pupil cost allocations of the school system, can have large implications for total revenue and expenditure estimates. Or, to state it another way, the variable with the greatest leverage over revenues is the property tax, and the variable with the greatest leverage over expenditures is the school system.

Residential and Employment Property Tax Revenues

From a modeling perspective, the major variable on the expenditure side, is the number of school children generated by the housing units. Assumptions need to be made about the average cost per pupil as a function of educational quality. Therefore, the most important cost variable among alternative scenarios is the assumption that is made about the demographic profile of family size and character that will accompany the assumed distribution of housing structure types and locations.

Studies indicate that new jobs, on the average, yield a positive net fiscal balance, whereas new housing units, on the average, yield a negative net fiscal balance. Although this conclusion is true on a marginal basis for in-

dividual additions to the existing land use base, it nevertheless must be kept in mind that the majority of the total property tax revenue comes from the residential base. The assessable base of residential property is much larger than the assessable base of employment property. Therefore, the bulk of the property tax revenue is derived from residential land uses rather than from employment land uses.

Because the property tax by law is required to be applied as a uniform rate to the assessed value of property, regardless of its use category, it follows that it requires a very large increase in the relative value of employment property, compared to that of residential property, to produce a significant impact on total revenue from the employment base alone. A related factor is that *all* the income tax derives from the residential land use component rather than the employment component. These several facts, namely: (1) the bulk of the property tax revenue comes from the residential base; (2) the property tax rate cannot be set differently for residential and employment land uses; and (3) the income tax derives entirely from residential land uses; all combine to create a situation in which the major influence over future County wide revenues is likely to continue to be the character of its residential land use.

In terms of modeling the future effect of land use changes on the revenue stream, therefore, the major variable is the assessed value of the residential real estate. Because high residential value correlates to high income, expensive housing produces both property and income

tax benefits. While this may be good from a fiscal perspective, it runs opposite to a social perspective that concerns itself with a need for more affordable housing.

Tax Burden

Figure 2.5 shows a comparison of tax burdens among about 30 jurisdictions elsewhere in the nation, with size and income characteristics similar to Montgomery County. As noted, Montgomery County sits almost exactly in the middle of this range.

It is interesting to note that the more than \$400,000,000 annual deficit produced by the FAST Rail scenario under the Stormy Prospect would have the effect of raising Montgomery County's tax burden to a level about the same as that of Montgomery County, Pennsylvania. This would be an experience, for individual residents of Montgomery County, Maryland, roughly analogous, from a fiscal perspective, to moving to Montgomery County, Pennsylvania.

Section E: ECONOMIC WEATHER FORECAST

One external factor of global scale could play a role in affecting the fiscal fate of the County even greater than any of those mentioned so far. This, of course, is the general state of the national and world economy. Volume 3, Chapter 7, reflects a digest of expert opinion on this subject, prepared for this CGPS report. The opinions expressed in the section below, extracted from Volume 3, are those of the consultants who were com-

missioned to collect this information and write Volume 3.

Recession and Montgomery County

Although economic predictions for the County in general range from dire to rosy, there is general agreement that hard times are coming, and they are expected to last at least through the early 1990s.

Montgomery County will probably have an economic recession at the same time the rest of the country does. This recession may be a little longer and deeper than other lows in the County's economic cycle since the 1960's, but the region's overall trend of economic and population growth is not expected to change. What will drop is the rate of growth.

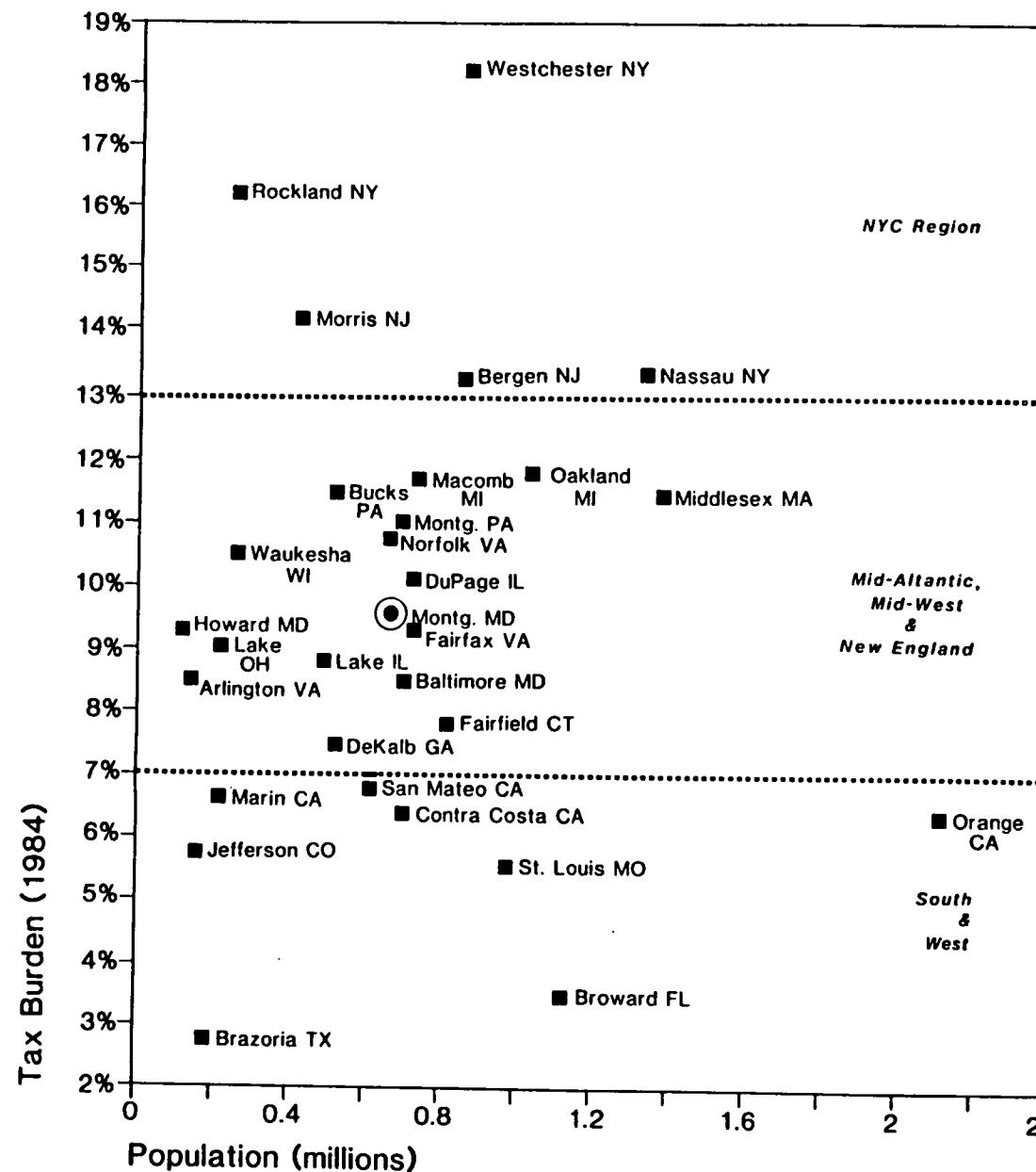
There are two other possible causes of growth slowdowns in Montgomery County. One is a large cutback in Federal spending. The other is the County's labor supply, housing supply, and transportation facilities not being able to support continued growth at a rapid rate.

The County is in a very good situation to deal with economic dislocations, thanks to a diverse economy and the Federal government's steady influences of a relatively consistent payroll and support of high-tech industry. The Federal government is the County's largest employer and a strongly-felt economic presence, although Montgomery County is less dependent on the Federal payroll than other jurisdictions in the

TAX BURDEN

FIGURE 2.5

Affluent Suburban Counties
Roughly Comparable to
Montgomery County, Md.



Tax Burden is defined as the ratio between
(a) average household income and (b)
State plus Local Taxes, in which (b) is expressed
as a percentage of (a).

This chart uses data from 1984 and is based
on households with an average 1984 household
income of \$37,500.

metropolitan area are. The County's economic cycles follow both national business cycles and Federal spending cycles.

Growth management tools such as the APFO have strengthened the County's recession resistance by keeping the County's budget from becoming overextended on infrastructure costs and by preventing serious over-building of office and commercial space.

If Montgomery County does have a recession, several impacts can be predicted. Taxpayer revolts are likely, and County expenditures will drop, although the tax base and total personal income will still rise slowly. Capital spending constraints will call for more efficient use of roads and utilities, such as clustered, transit-serviceable development and use of transit and ridership. The General Plan's efficient pattern of clustered development will be even more apropos.

The office market will slow, but losses in some sectors will be offset by gains in others. Drops in employment will lead drops in housing construction. The housing shortage will continue, especially for lower-cost housing. House prices won't drop significantly without a real depression. Lower incomes probably won't put many people out on the street: families will cope by taking in boarders and by sharing houses, and people will piece together supplementary income.

Section F: PRELIMINARY CONCLUSIONS

The economic weather forecast suggests that the national economy will slow down during the next few years, with a recession period lasting for at least some period into the 1990's. Optimists conclude that it could be a soft landing, for the economy to rest and recuperate before moving on to new plateaus of productivity and achievement. Pessimists conclude that pent up global imbalances, reflected in the overhanging twin towers of consumer/business debt and national debt, will require a day of reckoning in the U.S.A. that will engender significant changes in the national economy which may take longer to resolve.

Obviously, if the economic forces of the market place slack off in the next few years, in terms of new job creation in the Washington area, then more time will be available for in-depth long range planning to respond to the issues outlined in this CGPS report. On the other hand, continued job creation and immigration, even at a lower level, will still keep pressure on the area for public facilities; and affordable environmental or petroleum problems could maintain the political pressure to relieve traffic congestion even if the market driven growth rate should diminish.

It seems clear that global and national pressures will prevent the federal government from returning to the level of funding pass-through to the localities that it provided in the 1970's. The Montgomery County Executive recently noted, in testimony on this subject, that

federal revenues ten years ago accounted for 25 percent of the County's budget, whereas now it accounts for only 16 percent, and also that the State's share of the County's construction budget had dropped from 24 percent to less than 10 percent. The possible exception to this might be in transportation, if a national lobby, concerned for the effect on worker productivity of continuing traffic jams, were to become effective in getting taxes for this purpose raised at the national level. On the other hand, social problems such as drugs and AIDS are strong candidates for more federal expenditures.

The key to the question of affordability lies in examining the part of the affordability index that usually goes unanalyzed, namely the competing claims for private income other than those for taxes and housing. In the long run, the question of affordability only can be answered in the crucible of concrete short term decision making, where the choices between expenditure on public goods and private goods become more clear. The purpose of this CGPS report, and the continuing fiscal evaluation of alternative scenarios that should continue, is to help provide some long term perspective for such shorter term decision making.

Staff concludes from the work so far in assessing these complex factors that the cost of growth probably can be "afforded," but it probably will require an expanded definition of the kinds of costs to be considered (e.g., commuting time as well as taxes, etc.). The combined Traffic/Fiscal scenario evaluations suggest that to balance off the social costs will require public expendi-

tures on new transportation infrastructure, which in turn will require new sources of revenue if present tax rates are to be considered a benchmark. The logical place to look for this revenue is at the source of the behavior whose change could lessen the pressure for public expenditures, namely the automobile habit. Chapter One has traced the logical directions to take to overcome traffic congestion. This chapter suggests that this path is not necessarily fiscally prohibitive, although it will require great effort and careful attention to incremental planning and decision making over the next decade, to keep all the complex variables and external factors within the framework of a balanced local policy approach.

Section G: SUMMARY

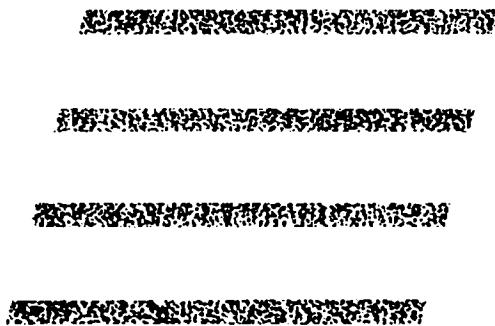
Can we afford the cost of growth?

Probably, but only under certain conditions.

Primarily, some funding patterns need to shift from the private sector to the public sector (i.e., reduce private expenditure on automobiles and increase public sector revenue for transportation). Some ways to help this happen could be to:

- (a) tax the use of the private automobile (gas tax, parking fees, etc.); and
- (b) obtain more direct state road and rail construction.

Chapter 3



CHAPTER 3: POLICY VISIONS

Section A: THE QUESTION IN PERSPECTIVE

How should we approach these problems?

The growth management problem is encountered at the local level on a case-by-case basis. But, seen from a larger prospective, it is nationwide, even worldwide. Primarily, the challenge is how to control urban sprawl and contain the environmental, economic, and social costs it engenders. It is sprawl that, whatever its socio-economic origins, results in the wasteful use of natural resources that cannot be sustained in the long run. (See Volume 4, Appendix 7, for a two page summary of the classic 1974 study, "The Costs of Sprawl.")

Montgomery County has accomplished more in this regard than most of the suburban jurisdictions in the nation. The preservation of open space and agriculture, under the "Wedges and Corridors" Plan, has been a significant achievement over the past twenty-five years. The 1988 *General Plan Assessment Report* concluded that the Wedges and Corridors plan has been implemented well from a macro-scale perspective, with the result that, in Montgomery County, the tide of leapfrogging suburban sprawl that has engulfed the hinterlands of so many other American suburbs has been held in check.

It also concluded that the actual shape of the urban envelope, the "Corridors" component of the plan, was suffering from the equivalent of middle-aged spread when

compared to the original vision of the plan. In other words, the micro-scale shape of the present built environment within the urban envelope does not exhibit today the degree of focused form and crisp design that was envisioned as a subsidiary part of the 1964 General Plan concept.

There are many reasons why a certain amount of micro-scale sprawl has occurred. One of them may be that the consensus that was developed in the 1960's, using the Wedges and Corridors concept as the symbol of a policy vision, was focused around the boundaries between the wedges and the corridors. As a symbol of comprehensive growth policy, the Wedges and Corridors concept was powerful, and continues to be so. But its illuminating power sheds less light on the interior of the urban envelope than on the division between the urban and non-urban areas.

What seems needed today is a new symbolic vision that retains the Wedges and Corridors concept, but also provides fresh stimulus for how the built environment portion of the plan should be developed at micro-scale. The rest of this chapter deals with these concerns for vision, policy, and consensus.

Section B: DIFFERENT INTERESTS, DIFFERENT VIEWPOINTS

It is a truism that where one stands is frequently dictated by where one sits. People naturally take positions that support their interests. Because, in a pluralistic society, there are so many interests, there tend to be many positions taken on issues. Sometimes, a vision of the common interest that transcends all the individual interests can be seen clearly. Most often it must be hammered out on the anvil of case-by-case decision making.

This CGPS study is part of an initiative led by the County Council to find a more comprehensive vision to guide future growth management efforts. It began with the Council's approval of a number of word pictures of alternative scenarios that might be said to represent the different visions of at least some groups within the community. These brief scenario statements formed the basis for the analytic work described in Chapters 1 and 2 above. They are repeated below to give a sense of what possibly may be the degree of difference of opinion existing in the County today.

Jobs Over Housing; or Fuel the Economy

Summary: Growth in jobs is promoted more than growth in housing to encourage tax base growth and better fiscal balance.

Advocacy Statement: Because everyone knows that new jobs produce more tax revenue than new housing, we

should strongly favor job growth. In addition, we need to recognize that business cycles will tend to flood the County at certain times with a boom of jobs that can taper off when market conditions change. So we should allow all the employment growth that the market is able to offer at any given time. We will continue to attract high income workers to live in the County. Other workers can find housing in other jurisdictions and we will be free of the fiscal burdens of providing schools and other services for large new resident populations.

Housing Over Jobs; or Take Care of Everyone

Summary: Growth in housing is promoted more than growth in jobs, particularly to enable the lower income levels of County workers to find affordable housing within the County.

Advocacy Statement: The County has a tradition of providing a variety of housing options to house ethnically, economically, and culturally diverse workers of the region. Apart from the social value of that policy, a diverse population makes the County a more vibrant place to live. However, because the demand for housing is far greater than the supply of housing, workers with low to moderate incomes, including many public and private service workers in the County, cannot afford to rent or buy housing near their jobs and must in-commute from other jurisdictions.

Because the market fails to produce the amount of affordable housing needed, the County should engage its

zoning and growth control powers to promote housing development. Encouraging moderately priced housing at higher densities makes mass transit systems possible and produces higher levels of transit use. Low and moderate income workers often have few transportation alternatives, and both need and are inclined to use public transportation.

Promotion of more clustered housing will reduce congestion on County roads, by giving workers alternatives to automobile commuting and letting workers live near their jobs.

Fast and Balanced; or We Can Have It All

Summary: There is no need to choose between kinds of growth and housing, and quality of life, because rapid growth will provide not only jobs and housing, but also the revenues to improve the quality of life.

Advocacy Statement: Growth does not have to compromise quality of life. Jobs are more important to the quality of life than almost any other individual issue, but housing is also important. If we encourage both jobs and housing, a fast pace that is carefully managed can provide benefits for all, and also deal adequately with congestion in traffic and schools and in other County facilities and services.

The County's commitment to high-tech growth, and, particularly, to growth in the emerging biotechnology industries, presents an opportunity for leadership. It is

important to seize that opportunity, and to recognize that willingness to accept it will not preclude meeting other goals as well. A look back at what the County has achieved in both growth and improved quality of life over the last 30 years shows clearly that it is possible to have both a high volume of growth and improved quality of life at the same time.

Slow and Balanced; or Manage the Pace of Change

Summary: Reduce the pressures of change by cutting back on jobs, and also housing to a lesser extent.

Advocacy Statement: The focus of the County should not be economic growth issues. The County is already in a favorable economic position with strong employment centers and a variety of housing. Enough development remains in the pipeline to ensure that the economy will not stagnate for many years. Smaller amounts of new employment permits should provide adequate capacity for existing businesses to expand, while continuing, but also slower, housing growth will alleviate the current pressures on new workers. The County should focus attention on protecting and enhancing the quality of life in its communities, while allowing enough economic growth to keep the local economy healthy and enough housing to balance the jobs. Congestion will decrease and more attention can be placed on education, recreation, and improving the visual quality of public places.

People Love Cars; or Go With the Traffic Flow

Summary: It is unrealistic to expect that people will give up the single occupant vehicle for commuting. All roads in the *Master Plan of Highways* should be built as proposed, and growth should continue to be regulated by Level of Service standards under the APFO.

Advocacy Statement: Growth, and the resulting congestion, benefit developers and new residents at the expense of existing residents. New residents can live elsewhere. Developers can develop elsewhere. There is no reason why current residents should suffer increased congestion when it offers them no substantial benefits in return. In addition, the County is so committed to development that requires the completion of the *Master Plan of Highways* network that it will be difficult to make significant cutbacks in highway construction even if the County commits itself to other strategies. As a result, any other pattern of transportation will require additional capital above and beyond the cost of the *Master Plan of Highways* network. In the context of the present federal deficit, and the inability of U.S. firms to compete with foreign products and, therefore, sustain household income growth, state and federal funding for transportation facilities is, at best, uncertain. In the face of that uncertainty, the County should not commit itself to new patterns of transportation that may result in fiscal burdens the County cannot successfully carry.

Fill Up Our Vehicles; or Make Better Use of Our Roads

Summary: Traffic congestion can be accommodated by increased use of high occupancy vehicles such as car pools, van pools, and buses, promoted by Transportation System Management (TSM) strategies which result in more efficient road use.

Advocacy Statement: Making better use of existing transportation facilities is the least-cost key to providing improved mobility for the County's existing and future citizens. The County must pursue policies to promote more efficient use of roadway facilities and more flexible travel behavior using traditional autos, vans, and buses. This will require less capital investment by the public sector than alternative strategies that rely more on major new transit rights-of-way. It will also make better use of scarce resources, decrease the number of vehicle trips and their trip lengths from their present volume, and improve air quality. At the same time, it allows residents to continue to use the automobile transportation they are accustomed to.

Shift to Transit; or The User Friendly Vision

Summary: The traffic congestion problem is best resolved by concentrating new growth in dense nodes along major new transit routes.

Advocacy Statement: The best way to ensure a healthy economy and high quality of life in the long run is to create a transportation system that reduces congestion

by offering viable alternatives to the automobile. A major part of that system would be land use patterns that maximize opportunities for transit use by locating jobs and housing in ways that provide convenient access to rapid rail, light rail and express bus transit. These patterns would minimize consumption of scarce resources like energy, open space, and clean air. They would produce stronger and more diverse communities, reduce the loss of lives due to traffic accidents, and keep the County's economy moving in times of future petroleum price increases. The rail station and bus node growth strategy recaptures the essence of the wedges and corridors in the original General Plan. It would create vibrant, healthy, and pedestrian-friendly corridor cities and mixed-use activity centers, combining the best features of cities and suburbs while preserving accessible open space and a sense of human scale and community connection.

Section C: CGPS PUBLIC WORKSHOP

The Montgomery County Planning Department hosted a public workshop on June 4, 1988, as part of the Comprehensive Growth Policy Study. About 80 persons attended, representing a cross of civic and business people who have been active in growth management issues in the past, together with staff from various County agencies. The purpose of the workshop was to generate ideas that can be used to develop alternative future development scenarios. The results provide an interesting profile of different perspectives, and how they can

begin to merge towards some shared ideas when given the opportunity to focus on how things fit together.

Although a considerable number of ideas for improving the County were offered, and there was a considerable divergence of opinions, a few common themes emerged. The two attributes which this group considered most important for the future Montgomery County were: 1) a stronger sense of community, and 2) a more pedestrian-transit oriented transportation system.

When workshop participants were asked what places had a better quality of life than Montgomery County, they chose places with a strong sense of community, and a "village" atmosphere. Mentioned most often were Annapolis, Maryland; Boulder, Colorado; and Davis, California.

The participants brainstormed ideas for creating a stronger sense of community. Suggestions included community-scale convenience shopping, bicycle- and pedestrian-accessible homes and shops, community focus "magnet centers," more variety in housing and income levels in residential neighborhoods, and more local control over what happens within a community.

Another important attribute that participants would like to see in Montgomery County's future is a transportation system that facilitates easy non-car travel. An often-expressed goal was pedestrian and bicycle access to homes, neighborhood activities, and the workplace.

Several ideas for achieving such a transportation system were offered. Among those ideas were: bikeways along transitways, various methods of taxing private cars and their use, concentrating new development around transit stations, auto-free areas, and educating the public on the benefits of maximizing the use of means of travel other than single-occupant car trips.

The following is a reproduction of the complete report prepared to summarize the process and products of this workshop.

Planning Process

The workshop participants shared viewpoints and developed ideas for future transportation and land use patterns. The Montgomery County Planning Department (MCPD) will use these ideas to produce alternative development scenarios for the Comprehensive Growth Policy Study, a project approved by the County Council as part of the Planning Department's work program for Fiscal Year 1989.

MCPD's recent assessment of the County's 25-year-old General Plan identified a problem: in the long term, the presently planned transportation facilities are inadequate to support the full buildout of the present zoning envelope without an increase in current levels of traffic congestion. The Comprehensive Growth Policy Study will identify and examine several different patterns of future land use and transportation facilities, and assess the implications of each alternative way to develop. This

analysis should assist the Planning Board, Executive, and Council to make informed decisions about the forthcoming series of master plans scheduled under next year's work program.

The Comprehensive Growth Policy Study process:

- MCPD develops several future scenarios
- County Council selects scenarios to test
- MCPD and its consultants test the chosen scenarios
- The Planning Board, County Executive, Council Council, and the public evaluate the implications of these scenarios

Workshop's Place in the Planning Process

This workshop marked the beginning of the Comprehensive Growth Policy Study's scenario development stage, when MCPD explored goals for the future and ideas for achieving desirable futures. Immediately after the workshop, the planning staff started combining goals and ideas into possible scenarios for further study.

Workshop Format

The one-day long workshop began with a brief overview of objectives and expectations for the overall project. A summary of the work of the Commission on the Future was presented by its chairman, Graham Molitor. Participants then divided into small groups for

hour-long focused discussions that also allowed free interaction. Participants reassembled for a summary and synthesis of the small group discussions. Next, Richard Tustian, MCPD Planning Director, presented a summary of planning work on the subject as background for the next group session. Participants returned to their small groups for further discussion. After lunch, the small group leaders presented summaries of their groups' views and ideas. A professional facilitator, engaged for this occasion, assisted the group in summarizing its collective findings.

What Happened

After a brief overview of the findings of the Commission on the Future by Graham Molitor, the participants broke into groups. They were requested to answer three questions:

1. Name three other suburban places in the United States that seem to have a better quality of life than Montgomery County.
2. Identify the major attributes that make them appear to be more attractive than Montgomery County.
3. If you were able to transfer these attributes to Montgomery County, which ones would be your top priority for transfer?

The places to live that workshop participants thought had a better quality of life than Montgomery County

were similar in the sense that they all were perceived to have a strong sense of community or a "village" atmosphere. The towns mentioned most often were Annapolis, Maryland; Boulder, Colorado; and Davis, California.

When the groups listed the attributes that they would most like to bring to Montgomery County, there also were a lot of similarities. Four common themes emerged: urban design, sense of community, accessibility, and social concerns (elderly, environmental, etc.). When the top three or four attributes from each group were tallied, two attributes were mentioned by most of the groups: sense of community and "village" atmosphere, and an efficient transportation system that allows access by non-car methods.

The top attributes from all of the groups were: community identity, more mixed land uses, ease of use of many modes of transportation, neighborhood access (especially pedestrian and bicycle), convenience shopping, neighborhood focus in government/issue resolution, increased use of mass transit, environmental protection, scenic and cultural amenities, sense of community, affordability, accessibility, jobs, and housing.

In between the two small group sessions, the MCPD planning director gave workshop attendees an overview of the planning context into which this workshop fit.

He told the group that the aspect of planning with

which this workshop was most concerned was the relationship between land use and transportation.

This workshop will grapple with social visions, he said, which tend to be abstract. The planning staff are obligated to take social visions and apply the laws of logic and physics to see whether the goals that are sketched out by such visions can become a workable reality.

He then explained the relationship of today's workshop to the broader framework of Montgomery County's planning. The County Council approved in 1970 a Countywide General Plan, "On Wedges and Corridors," as an overall guide for planning, zoning, and transportation. A General Plan Assessment Study (January, 1988) concluded that the General Plan concept is sound, and that Montgomery County has followed the General Plan at the macro-scale, maintaining the wedges and corridors land use pattern in a general sense. The County has not followed it at the micro-scale, however, largely because of the forces in society that encourage sprawl. Another conclusion of the assessment study is that our currently planned transportation system will be unable to handle all the traffic that ultimately could result if all land is fully developed at its current zoning, unless we are willing to tolerate more congestion.

After Mr. Tustian's presentation, workshop attendees returned to the small groups, where they were asked to discuss two further questions:

1. Assume that you wish Montgomery County to develop in the direction of the three attributes that received the most votes from your group in the previous session. What major land use planning issues will emerge?
2. Without stopping to evaluate anyone's suggestions, please "brainstorm" all possible ideas and solutions for the land use planning issues identified above.

Although a wide variety of issues were discussed, many of the groups' major land use planning issues did deal with the two attributes the groups most wanted to transfer to Montgomery County: sense of community, and transportation modes and accessibility.

Regarding a sense of community, participants thought it hard to provide "community" in many areas of Montgomery County, especially in homogeneous neighborhoods lacking desirable diversities, a community focus, local shopping, or a sense of control over the community's destiny. Another barrier was considered to be the price inflation occurring in working-class or mixed-class neighborhoods, which turns them into homogeneous high-income areas. The groups talked about the issues associated with creating mixed-use communities with a range of income levels.

Several solutions were offered during the discussions. Some of the ideas would increase the supply of affordable housing, some would create neighborhood "magnet centers". One proposal was more self government

for communities. Another suggestion was to use Transferable Development Rights (TDRs) to increase density in existing small towns. Many people thought that more pedestrian and bicycle travel would enhance neighborhoods and suggested building sidewalks and safe bicycle paths.

Pedestrian and bicycle travel also played a large part in the transportation issues and solutions. The desired goal was a transportation system that allows easy non-car travel. Groups acknowledged, however, that people tend to prefer cars, that many streets are unsafe for pedestrians and bicycles, and that much of the County's jobs and housing is not transit accessible.

The participants had numerous suggestions on this topic: a community or County tax to raise money for pedestrian/bicycle facilities, public education, cross-County transit, elevated walkways, auto free areas, bikeways along transitways, a free brochure on "How to Buy to Avoid Congestion," building vertically instead of horizontally around transit stations, heavily taxed private cars, etc.

The groups identified two issues that they perceived to complicate the planning process in general: community resistance to change, and the tendency of some politicians to not look beyond the end of their terms in office.

Section D: THE COMMISSION ON THE FUTURE

In December 1988, the report of the Commission on the Future was released after 18 months of intensive effort by a committee of civic and business representatives appointed by the County Council. The diversity of interests reflected by the membership of this group mirrored the situation of multiple interests and viewpoints at work in the County at large. The consensus achieved by this group constitutes a milestone effort in seeking to put together a composite vision that can provide a very useful reference point for more detailed planning efforts. Reproduced below is the cover letter from the Commission and the Summary of the Commission's recommendations.

Letter from the Commission

To Members of the County Council and the County Executive:

On behalf of the members of the Commission on the Future of Montgomery County, we are pleased to submit our final report for you to consider and act upon. It is the culmination of months of discussion, some of which was controversial, and not all Commissioners agreed on every issue or on every approach to those issues. We have identified key trends and have highlighted those critical and emerging challenges likely to shape the future of our country. We believe that we have produced an informative and thought-provoking document,

which will give you a better basis for addressing those complex policy decisions that we face.

Throughout our report, we have suggested innovative options — new departures from past practices, new solutions to old problems — that we believe offer the potential of affordable quality for all citizens.

While it appears unlikely that Montgomery County will experience stringent austerity in the future, it is also unlikely that we will be so prosperous that we can sustain a quality future simply by expanding traditional programs and practices. Whatever we do, the future will force us to make hard choices between the competing legitimate needs of different groups of citizens. We must seek to resolve the issues of growth and livability, quality and affordability, not simply as acceptable trade-offs or compromises, but as innovations.

In preparing the report, the members of the Commission have spent the past 18 months on a fact-finding mission which, among other tasks, gathered information concerning a wide range of trends and developments that are likely to have significant impacts on life in Montgomery County during the next 30 years or so. In this process, there were many times when we felt overwhelmed with data: tables and graphs, government reports and expert testimony, overlapping considerations and conflicting concerns. Gradually, however, we began to understand the basic combination of forces that have brought us to where we are today, and that are most likely to profoundly shape our future.

Once the Commission completed its information gathering, we took our preliminary findings to the public, in the form of a draft of this report. Commission members held 17 public forums throughout the County to discuss the draft report with over 900 citizens. In addition to these public forums, members of the Commission met with various civic organizations, business groups, service organizations, school-oriented groups, and county committees to present and discuss the draft report. During the citizen input process, Commission members were presented with a new dimension to our future that we had not previously considered. While we pursued our County Council mandate to produce a future agenda for Montgomery County, we found that most residents were, in reality, primarily concerned with the future of their local communities. We went to the public forums to talk about managing growth and change in Montgomery County, but citizens often came to those meetings to talk about managing growth and change in Aspen Hill or Potomac; Silver Spring or Germantown.

Several major themes emerged which served to guide us in the development of much of our report and in the framing of a number of specific recommendations.

Sense of Community

Montgomery County is a pretty big place. It spans an area the size of the State of Rhode Island, and houses a population larger than metropolitan Boston. In an entity that is this large, this diverse, and so geographically widespread, it often is difficult for many residents to

develop a strong sense of identification with a particular community.

Clearly, the community with which we each identify — and to which we devote our active concern and commitment — is the neighborhood where we live. A number of the report's recommendations are designed to foster a greater sense of community in our neighborhoods. We strongly endorse neighborhood magnet centers, which can serve as a hub for neighborhood activities, and as a meeting place for conversation, recreation, and leisure. We also call upon the county to encourage neighborhood councils, which we think can give individual neighborhoods a greater share in making decisions about matters that affect the quality of life in the immediate community.

A Moderate Course on Growth

As we conducted our public forums, we heard many complaints from citizens about the rate of growth in Montgomery County — about jammed highways and overcrowded classrooms, about housing developments invading once pristine woodland areas, and about high rise buildings replacing the corner grocery store. We also heard voices on the other side, stressing that if we block all growth the county will stagnate, and eventually decline — that without growth we cannot expect to continue to enjoy our high standard of living, or provide our children with a first rate education, or pay for the full range of other county services we have come to take for granted.

We believe both sides are right — up to a point. We need moderate growth to provide the better schools, the improved libraries, the more sophisticated medical facilities, the modern shopping centers and the first class services that make and will continue to make Montgomery County a quality living environment. But we threaten all of this if we allow unconstrained growth, and if we fail to carefully manage and plan our growth for the future.

Our report concludes that the growth in employment of the past few years — averaging more than 20,000 jobs annually — is much more than we can prudently absorb. We suggest moderating this rate of growth to about half that level — or 10,000 jobs per year. This will bring the growth rate more in line with the levels we have experienced over the past decade or more.

We also strongly endorse preserving the agricultural reserve — fully one-third of the county's land area — in its present undeveloped state. We see this area as a heritage that should be left to future generations. But we also call for increasing housing production by 50 percent above projected levels, particularly near selected Metrorail stops. This will bring housing production more in line with the moderate employment growth we call for. And it should make it far easier to supply housing at affordable levels, something which we have found extremely difficult to do in recent years.

Demographic Change

Today, more than a quarter of the county's population are foreign born or members of racial minorities. This increasingly rich cosmopolitan mix of culture and enterprise will clearly be a major feature of our future.

In addition, our population is growing both younger and older. At one end of the spectrum, a "baby boom echo" is now filling many of our maternity wards. At the other end, greater longevity is producing a boom growth in the numbers of seniors in the county, especially the over-75 population, which is expected to double.

These demographic changes have profound implications for the county's future. They will require that we give greater attention to leisure time activities, adult education programs, and to the adequacy and affordability of our health care delivery system. They will also require that we take steps to expand our child care programs, and ensure that those responsible for child care are properly trained and licensed. It is also essential that we plan now to ensure that there are adequate classrooms for the "baby boom echo" generation.

Preparing Our Children to Meet the Future

Our children, of course, are our greatest resource for the future. If we do nothing else, we must ensure that they are adequately prepared to face the challenges and to take advantage of the opportunities that the future will bring. For this reason, our recommendations on educa-

tion are among our most important. We have to be able to attract and keep first rate teachers, and we have to expect to compensate them appropriately. We must beef up the curriculum — especially in the math and sciences areas — if our graduates are to become fully productive members of the workforce of the future. Every study that we have seen has shown that the more teachers treat their students as bright and gifted, the more those students can achieve — even if they begin their school careers as average scholars. We should be prepared, over time, to phase in a longer school year.

We must also ensure that the benefits of our outstanding educational system — and we believe it is an outstanding system — be made available to all on an equal basis. Montgomery County has a tremendously diverse school population, and it is essential that our educational system be designed to allow every student to have the chance to expand his or her basic talents and abilities to the fullest.

There is no single key — no silver bullet solution — that will assure our ability to answer all the questions and solve all the problems we see on the horizon. Our 18 months of study suggests there is a wide array of constructive policies by which we can manage our future and these have been placed in our report for you to act upon.

Our report represents the completion of a tremendous effort by both the members of the Commission you appointed and the many citizens who took the time to par-

ticipate in our outreach effort, both orally and in writing. All of us who have taken part in this process have grown in understanding to a greater extent the complicated and complex factors shaping our social and economic future. Just such an understanding will be fostered for all our citizens as you, our elected representatives, complete your deliberations concerning our report. Our final legacy as Commissioners will be to remain available to assist you in preparation for your planned Fall Chautauqua on the Future and any other deliberations which involve our report.

We have thoroughly enjoyed this opportunity to serve the citizens of Montgomery County as members of the Commission. We hope the report will provide an opportunity for all citizens and officials to reflect on the future and to make choices which will contribute to the quality of life in our county in the coming decades.

Sincerely,

Graham T.T. Molitor
Chairman

Richard A. Wegman
Vice Chairman

Summary of Recommendations

Planning for Orderly Growth

Strive for a steady, sustained growth in the crea-

tion of new jobs, based on a 10-year trend average of 10,000 jobs annually.

Be selective in the kinds of employment growth we encourage.

Sponsor or cosponsor with neighboring jurisdictions, a major study of how our regional economy works.

Undertake a comprehensive reassessment of the General Plan.

Maintain the Agriculture and Open Space Reserve.

Allow limited recreational uses in the reserve and open space.

Plan for a more compact pattern of living near selected Metrorail stops.

Increase housing production by 50 percent above projected levels countywide.

Provide needed infrastructure at a more rapid pace.

Restrict locations permitted for low-density employment.

Change zoning to require convenience commercial uses in all major employment centers.

Replan the I-270 corridor from the Beltway to Clarksburg; formulate an overall plan for the Route 29 corridor.

Develop a comprehensive, functional transportation plan.

Survey all residents regarding their transportation needs.

Assist neighborhoods in acquiring their own jitney services.

Provide convenient, free public bus transportation within the county.

Give greater attention to aesthetic considerations in all aspects of planning.

Improve cooperation among the County Council, County Executive and Planning Board in planning and growth management.

Neighborhoods

Explore establishment of locally-elected neighborhood councils in neighborhoods that want them, allowing each to share in the decision-making on matters that affect only its neighborhood.

Enact zoning text amendments that would permit establishment of home occupations and small businesses in willing neighborhoods under controlled conditions.

Encourage the creation of magnet centers that can be operated and used by neighborhoods.

Appoint an ombudsman for neighborhood issues.

Encourage county government to work with neighborhoods on public transportation issues.

Ensure that it is possible to travel by foot or bicycle within neighborhoods.

Housing

Strengthen implementation of the county's housing policy that anyone — of whatever income or ethnicity — has the opportunity to live anywhere in the county.

Provide incentives to encourage the construction of housing near Metro stops.

Establish a land bank for low and moderate income housing units.

Reinstate the 15 percent Moderately-Priced Dwelling Unit (MPDU) requirement and reduce the threshold units from 50 to 35 or 40 units.

Retain the MPDU designation on MPDUs for the life of the dwelling unit.

Encourage use of high-tech construction methods in an effort to reduce housing costs.

Enlist the aid of business and industry to help finance the building and employee purchase of moderately-priced housing.

Find a much larger, steady source of income for the county's housing programs.

Build more urban-like neighborhoods with closely-knit housing balanced with amenities.

Human Services and Child Care

Emphasize case management in the Department of Social Services.

Promote the issue of recruiting, training and retaining qualified child care providers.

Make available before- and after-school care for all elementary school children.

Increase funds for recreation, library, and school programs for after-school activities.

Make transportation available for after-school and recreation activities.

Plan county facilities to include joint use by children and senior citizens and develop inter-generational programs throughout the county.

Education

Define clearly the mission of the public schools and communicate to the community what the schools can and cannot do.

Involve parents in the educational process.

Promote greater fiscal accountability from the Board of Education and urge greater cooperation among the Board of Education, County Council, County Executive, and Planning Board.

Provide greater latitude to teachers and principals on resource allocation, curriculum, and staffing matters; reduce size and scope of area offices; strengthen central office responsibility for equity oversight and innovative programs.

Keep teachers' compensation competitive with the private sector and with other jurisdictions.

Work to simplify Maryland's Teacher Certification System.

Make provisions for a longer school year.

Ensure that school curricula keep current with the demands of modern technology.

Encourage more private sector involvement in the schools.

Continue to encourage experimentation with new ideas and programs.

Coordinate all higher education in the county.

Work to ensure strong state support of community colleges, including sufficient funding for Montgomery College.

Bring together educators, business, community, and government leaders regularly to discuss the adequacy of higher education and whether it is meeting the needs of the community.

Improve the public perception of technical educa-

tion and technical positions as challenging and respectable career choices.

Environment and Health

Explore every possible way of reducing the amount of garbage that must be disposed of, through recycling and reduction of waste material.

Require gasoline stations to install gas vapor recovery devices at the pump.

Adopt more stringent emission standards for all vehicles.

Consider radon inspections at the time of sale of a home.

Expand the role of county government as a protector of the health of its citizens.

Explore options to create an insurance group for citizens otherwise unable to obtain group health insurance at group rates.

Expand and improve the public health clinics.

Make a transitional health care system a priority in health care planning.

Expand the health resources in the Montgomery County Public Schools and intensify health education.

Quality of Life

Reaffirm its commitment to the park system, en-

sure open spaces in urban areas and continue to protect and acquire stream valleys to form connecting greenways.

Enact a countywide tree protection ordinance.

Maintain close-to-home recreation opportunities by requiring park or open space as a part of any new or redeveloped residential area over a certain size.

Develop a coordinated public policy for recreation and cultural facilities and programs.

Consolidate management of all Montgomery County public recreation programs and resources, regardless of ownership by the year 2000.

Pay special attention to the leisure and recreational needs of all populations.

Acquire land now that could be used in the future for a major cultural center for the visual and performing arts.

Establish a museum of our historical and cultural heritage which would illuminate our history and point to our future.

Support an expanded library system so that it may continue to serve as a major cultural, educational, and information service.

Expand all public safety services to keep current with the increased population, changing demographics, and growing social problems.

Keep pace with technological changes in fire and rescue procedures and develop contingency plans in the event of an emergency at a high technology or biotechnology site.

Governance and Finance

Explore various options for increased source of revenue.

- Increase the property tax.
- Increase the income tax.
- Impose impact fees throughout the county.
- Tax the increase in real estate values.
- Extend the definition of taxable property.
- Increase user fees.
- Close the Multiple Dwelling Unit loophole.

Maintain good management practices.

Expand cooperative links with neighboring jurisdictions.

Plan, in a systematic and orderly way, for the future.

Section E: A POLICY VISION: CENTERS AND TRAILS

If the opinions of the attendees at the CGPS Public Workshop and the members of the Commission on the Future are representative, the people of Montgomery

County are searching for an environment that combines the best features of two basic ideas, that of Community and that of Accessibility.

The first is an inward “centering” kind of idea, in which one can imagine places where people can link up with each other in ways that are mutually supportive and convenient, at a scale that is reassuring rather than frightening. It has connotations of convenience, comfort, service, stability, amenity, and symbolism. There is an implicit notion of pedestrian accessibility. The idea shares somewhat of the nature of “Main Street” as it remains nostalgically in our collective memory.

The second is an outward “dispersing” kind of idea, in which one can travel easily and without delay to all the ports of call where travel opportunities may await. It has connotations of movement, speed, flexibility, and adventure. There is an implicit notion of the use of a technological vehicle. The idea shares somewhat of the basic nature of the idea of freedom, which is rooted deeply in the psychological roots of the American experience.

Although the centering nature of the Community goal, and the dispersing nature of the Accessibility goal, are reciprocal opposites, they are not necessarily incompatible as a combined policy goal. The success of the Wedges and Corridors concept as a symbolic goal statement (which is built on two reciprocally opposite ideas called historically the “Country” and the “Town”), demonstrates that there is power in a policy vision that combines two reciprocal ideas. The potency of the

Wedges and Corridors symbol has been its simple expression of the need to keep the town from spilling wantonly into the country so that the best of both worlds can be retained. What is needed now is a symbolic expression for a vision of how the built environment within the "Town" or "Corridors" part of the General Plan should function to serve the current goals of Community and Accessibility.

We suggest the term "Centers and Trails" as a candidate name. It can serve as a symbol in two dimensions: (1) psychologically it can represent the twin goals of Community and Accessibility, which appear to be strong latent aspirations assuming many of the County's residents, and (2) physically it can represent the twin goals of new travel networks and clustered land use concentrations, which appear to be strong implicit imperatives arising from the traffic congestion problem. Whatever the ultimate name, the concept that lies behind the notion of "Center and Trails" does seem to be an appropriate policy vision for the next thirty years, to complement and add to the continuing vision of "Wedges and Corridors."

Section F. SUMMARY

How should we approach these problems?

The growth management problem is nationwide, even worldwide. Primarily the challenge is how to control urban sprawl and contain the environmental, economic, and social costs it engenders.

Montgomery County has accomplished more in this regard than most of the suburban jurisdictions in the nation. The preservation of open space under the "Wedges and Corridors" Plan has been a significant achievement over the past twenty-five years. Today an additional challenge faces us in terms of travel behavior. The County's Commission on the Future has pointed the way. Without losing sight of "Wedges and Corridors," we should consider shifting our policy focus towards a vision called "Centers and Trails."

Chapter 4



CHAPTER 4: MANAGEMENT TOOLS

Section A: THE QUESTION IN PERSPECTIVE

Are the present growth management tools adequate?

Coordinating a comprehensive growth policy requires balancing the needs of many different elements that make up the overall quality of life. To keep these diverse elements in perspective requires a mental framework, or model. The model used in this report establishes a growth policy wheel at the center of a quality of life circle. The concept of a wheel, whose spokes must all fit together at the center, seems appropriate to a policy exercise that seeks to achieve a dynamic balance among complex elements over time.

This reference framework divides the universe of possible governmental policy considerations into eight elements. They are:

1. Economic Policy
2. Housing Policy
3. Social Policy
4. Transportation Policy
5. Natural Resources Policy
6. Community Facilities Policy
7. Fiscal Policy
8. Land Use Policy

The two most important questions are: (1) how are these eight policy elements balanced with regard to each other?; and (2) in what direction is the whole policy wheel aligned? To align the policy wheel with the goals of the population is the task of growth policy. To keep balance among the implementation spokes at the hub of this wheel is the task of growth management.

The management hub must be viewed within the context of the powers available to government for dealing with growth. They are essentially only two: the police power and the purse power. The first permits government to place restrictions on the property rights of individuals within the private sector, and the second permits government to collect tax revenue for public facilities from individuals within the private sector. However, these powers are limited by the constitution of the United States. The constitutional dividing line between the private sector and the public sector sets up the basic field on which the growth policy exercise must be played. Figure 1 places the growth policy wheel within this field.

Policy elements one through six deal with the six major substantive aspects of suburban growth: Jobs, Housing, People, Transport, Nature, and Community. In our society, Jobs, Housing, and People are considered to fall primarily in the realm of the private sector. That is to say, the initiative for change lies primarily with individuals, rather than with government. By contrast,

Transport, Nature, and Community are elements that fall primarily in the public sector. This is to say, the initiative for change rests primarily with the government, rather than with private individuals.

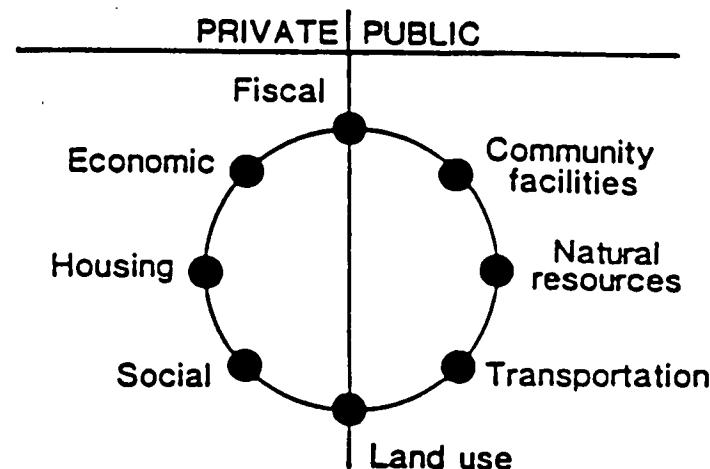


FIGURE 1

By Transport, we mean primarily the provision of public facilities that enable the movement of people and goods, such as roads, transit, para-transit, public parking, and related governmental activities. By Nature, we mean primarily the provision of public facilities that protect the public from the effects of pollution, such as water and sewer services, and which more generally protect the "natural" environment from the detrimental effects of the "built" environment through the preservation of open spaces, parkland, wetlands, trees, and other natural resources. By Community, we mean primarily

the provision of public facilities that provide and enhance the collective safety and well-being of local communities such as schools, police and fire/rescue stations, libraries, civic centers, playing fields, and active recreation centers, etc.

Figures 2 and 3 illustrate some of the forces at work among these six elements. Growth in the private sector tends to require the development of land and tends to create a demand for additional public sector facilities (Figure 2—Vector 1). Public sector growth, in turn, generates a cost that must be borne by the private sector (Figure 2—Vector 2).

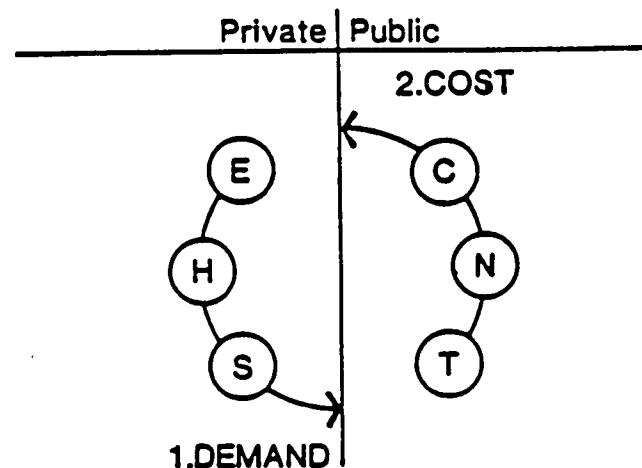


FIGURE 2

Whatever cost is borne by the public sector must be matched in turn by revenue from the private sector,

whether collected directly by local government or provided by grants from state or federal governments (Figure 3—Vector 3). And, finally, excesses in the character and rate of private sector growth must be constrained to some degree to achieve an orderly pattern and pace that avoid the nuisance, pollution, and congestion effects of incompatible land uses and inadequate public facilities (Figure 3—Vector 4).

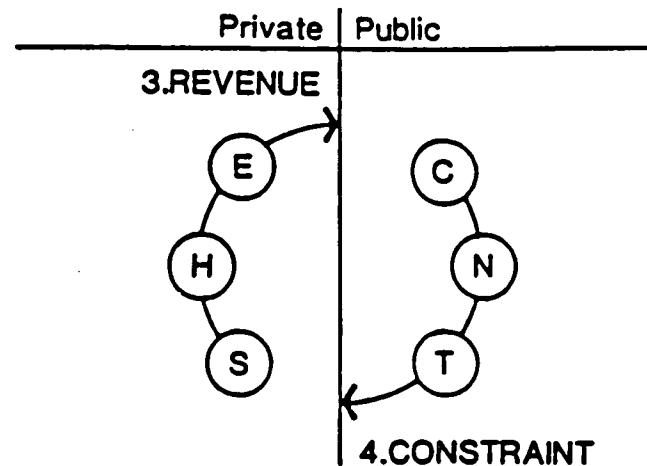


FIGURE 3

The combined pattern of these four directional forces reveals that local government needs to maintain a coordinated balance in two critical areas that cross the boundary line between the private and public sector (Figure 4). The first is the point at which the costs of public facilities must be balanced by the revenues needed to pay for them, through the use of the purse

power. This is the area of Fiscal Policy. The second is the point at which the demands for land development must be balanced by the constraints needed to maintain pattern and pace through the use of the police power. This is the area of Land Use Policy.

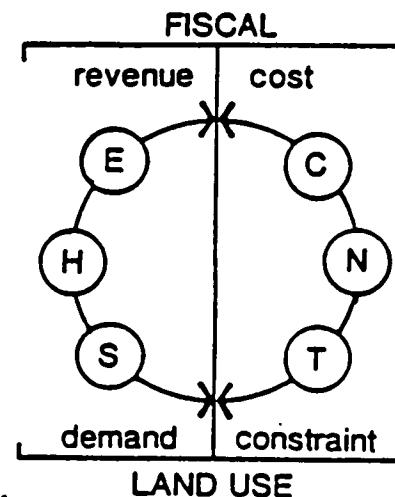


FIGURE 4

With the addition of those two critical balancing elements, the growth policy wheel is complete (Figure 5). Balanced equilibrium between Fiscal Policy and Land Use Policy is the key to aligning this policy wheel with the goals of the population. But maintaining balance among all eight of the policy elements also is necessary, so that the rim of the policy wheel is properly weighted and aligned with the decision-tree spokes that emanate from the management hub. Like the quality circles of business and industry, the Quality of Life circle must in-

corporate and coordinate the perspectives of all its constituencies, and allow them to feed back into the balancing of the policy wheel in order to achieve an integrated outcome. Fortunately, the legal framework is now in place to permit a high level of integration to be attempted!

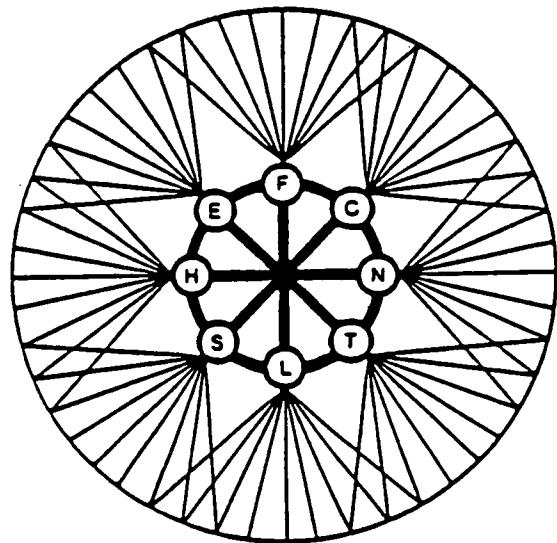


FIGURE 5

Section B: MANAGEMENT SYSTEM IMPROVEMENTS

Chapter 3 has sketched out a new policy vision called "Centers and Trails." Chapters 1 and 2 have traced some logical consequences that flow from the analysis of alternative scenarios. Extrapolating from these sources, staff

concludes that the following are at least some of the next steps that might be taken in continuing to deal with these issues.

New Travel Network Plan

Chapter 1 concludes that, if growth is to occur without excessive congestion, it will be necessary to greatly reduce the auto driver share of the daily journeys to work. A new travel network is needed, comprising pathways for high occupancy vehicles. This network should not only be separated from the general roadway traffic flow, but also should be fairly widespread and interconnected.

It is noted (especially in Volume 2, Chapter 3) that there is not yet enough experience nationally with high occupancy vehicles (HOV), especially on HOV networks, to easily calculate their ultimate effectiveness. A great deal more work is needed to explore further the feasibility and cost-effectiveness of the HOV mode of travel, and, more particularly, to determine which HOV rights-of-way would make the most sense to target for early implementation, and what sequence of installation would fit best with the range of other County policies that need consideration. Similarly, the question, of whether a major long range expansion of rail facilities is desirable, requires a great deal more analytic planning before any concrete evaluation of specific location and priority can be presented.

Part of the further evaluation of both the VAN network

and the RAIL network should be the question of how these two modes best interact with each other. The VAN network is cheaper than the RAIL network. Is it possible to migrate from an emphasis initially on a VAN strategy, and gradually shift to an emphasis on a RAIL strategy, as the need arises through the passage of time?

Finally, there is the question of how the two modes can work together in space. The scenarios deliberately tested the VAN network separately from the RAIL network to evaluate their relative effectiveness. However, any plan for the real world probably should combine both techniques, emphasizing the first in some locations and the second in others. This is particularly true with regard to using buses on the HOV lanes, in addition to carpools and vanpools, because buses also can perform a feeder function for light and rapid rail systems.

At this point, the only firm conclusion is that new rights-of-way dedicated for some combination of carpools, vanpools, buses, and rail seem necessary in the long term. What combination, if any, of these technologies should be chosen for implementation requires a significant planning effort. A start will be made on this during the current fiscal year, under a project authorized by the Council in the Planning Department's work program, called therein the Comprehensive Transportation Plan.

This work responds not only to the logic of this CGPS report, but also to one of the recommendations of the Commission on the Future, urging work on a new func-

tional transportation plan. In addition, it will relate to, and provide local coordination for, the Council of Governments' Transportation Planning Board's Long Range Transportation Plan, which is ongoing at the same time, and for the State of Maryland's major consultant study of ways to relieve traffic congestion in major transportation corridors throughout the state.

Local Transportation Revenue Sources

Chapter 2 concludes that additional revenue for transportation must be developed, if any of the new travel network strategies are to be undertaken. If it is desirable to avoid raising property and income taxes for this purpose, some other source will need to be found.

An obvious candidate for this is the gasoline tax. Some of the attraction of this source of revenue is that, like excise taxes on cigarettes and alcohol, it may have the side effect of reducing the consumption of the commodity to which the tax is applied, with resultant benefits to the public health and welfare. In the case of cigarettes and alcohol, the benefit presumably is to the physical health of individuals. In the case of gasoline, the benefit presumably would be in terms of reducing air pollution and ameliorating the potential threat of an externally initiated petroleum crisis. Also, to the extent that the tax were to contribute to a lower volume of automobile trips, it would also be reducing the need to build additional transportation facilities, so that any decline in revenue from this source would be matched in direction

by a decline in the demand for which the tax revenue is needed.

Several possible problems may lessen the allure of this solution. One might be that the state and federal governments, particularly the federal, could reach the same conclusion, and could be faster than the County in applying their own increased gasoline tax. The County presumably would need state legislation to authorize it to use a local gasoline tax, unless it could be construed as another excise tax already within the purview of the County's authority. A legal opinion would be needed. If it were determined that state legislation would be necessary, perhaps a local piggy-back addition, up to a certain ceiling, could be added to the state tax, in a manner similar to the local piggy-back on the state income tax.

Another potential source of revenue might be a tax on privately provided parking spaces, with public spaces priced in a manner that appropriately matches to the resultant private parking costs (cf., Chapter 1, Figure 1.6, the TIE package). Subsidiary questions in considering such a concept might be whether it should be applied just to commuter parking, or to retail and other special use parking as well. Questions of regressivity naturally arise in considering the impact of taxes such as this (e.g., effect on food prices if applied to supermarket parking lots, etc.), and study would be needed to determine if this should be a strategy to consider, and, if so, how it might fit against the overall need over time.

Another important revenue source, whose importance is

underscored in Chapter 2, is that of federal and state funding grants, as well as direct state construction of new transportation facilities. A large proportion of the projects in the Master Plan of Highways that have yet to be built are state roads. In recent years, the County government has been paying for a number of such roads, in order to advance their construction at a pace faster than the state felt it appropriate to proceed, given the level of the state gasoline tax rate and its other perceived obligations.

Now that this CGPS report has put some preliminary total cost estimates on the long range build-out costs for possible highway, HOV, and rail networks, it may be desirable for the Council to authorize some collaborative studies by the County Executive and the Planning Commission to further explore additional cost/revenue scenarios with regard to state transportation commitments. Exploratory discussions with the Maryland Department of Transportation, and other appropriate officials might be useful at appropriate times as further thought is given to this important issue.

Revised Master Plans and Zoning

Chapter 1 points out that new travel networks without a comparable level of clustered mixed-use land concentrations at points along them may be like a horse without a carriage. They will not carry as much freight as they otherwise are capable of. However, the land use patterns in all three of the geographic scenarios are dif-

ferent, to varying degrees, from that of the present master plans and zoning envelopes now in place.

Volume 2, Chapter 5 (pages 48–51), give some indication of the nature of these differences. As a generalization, it may be said that, if a target goal of providing for a balanced J/H ratio (i.e., one housing unit for every resident worker Countywide) were to be considered, some significant upzoning in housing over time would be needed. Similarly, if it were a matter of concern to balance local traffic volumes carefully by subareas of the County, as is the case today with the Annual Growth Policy, there might need to be a downzoning of some employment areas, in order to achieve balance.

Some of these changes would not be too difficult. Others probably would involve significant public debate. Questions of equity among property owners and the appropriate limits of the police power would need careful scrutiny, and detailed analytic studies of traffic implications would need to be made on an area-by-area basis. Such work requires time, both for the studies and for the public decision-making process. Therefore, logically it should only be undertaken incrementally in a manner similar to that which historically has taken place over the last 25 years, as master plans for individual areas were developed to flesh out the details of the General Plan.

It took about 10 years (from approximately 1965 to 1975) to complete a first generation of master plans that elaborated on the Wedges and Corridors theme first

adopted by the Planning Commission in 1964. It possibly could take a similar period of time to complete a series of master plans that would fully elaborate on the Centers and Trails theme suggested in this CGPS report.

The present generation of local area master plans, now moving towards the County Council, each have their own unique attributes, and each needs to be considered separately against the backdrop of the perspective provided by this CGPS report. The Planning Commission should consider attaching some commentary to each of these as they go forward, touching on the logic of the relationships between the thematic ideas in this report and the specific land use recommendations contained in the individual master plans. It should be anticipated that some plans will provide more opportunities for comment in this regard than others, and also that an evolution of plans over time would be appropriate, as further transportation planning and fiscal analyses are undertaken.

Legal Issues Concerning Staging

The concept of “staging” new development, so that public facilities are brought on line in parallel with the need generated by new private developments, became a major issue as local area master plans were first developed during the late 1960’s. It has remained at the forefront of public concern ever since. Over time, methods for dealing with it were adopted, beginning with zoning staging elements in local master plans, and moving on through the initiation of the Capital Improve-

ments Program (CIP) in 1970, and the adoption of the Adequate Public Facilities Ordinance (APFO) in 1974 (focusing on subdivision permits), to the recent adoption of the Annual Growth Policy (AGP) legislation by the County Council in 1986.

Ten years of experience with the conceptual and technical approach first proposed by the Planning Commission in 1979 has resulted in a subdivision approval process with a high level of coordination between the County's exercise of the police power (cf., AGP and APFO) and its exercise of the purse power (cf., CIP). Land policy and fiscal policy can be coordinated annually by the elected officials, working within a time frame that looks about 4–6 years ahead. By all accounts, the system seems to be working (admittedly better or worse depending on one's perspective), both in terms of slowing down subdivision approvals in some areas, so as to stay within the limits of infrastructure investment policy, and also in terms of speeding up the infrastructure schedule in some other areas, to respond better to the short-term growth pressures of the private market.

However, this year, for the first time, a number of appeals from the County's decisions about short-term subdivision approval ceilings have been taken to court, seeking to overturn the entire system that uses the police power in this way to limit subdivision approvals. The Planning Commission, which administers the Subdivision Ordinance, will respond to these challenges, and the outcome will be determined by the Maryland courts. What is relevant for this long range CGP Study,

is simply to touch on the implications for the long term if the courts should decide that the current system (i.e., limiting subdivision approvals to a level commensurate with the holding capacity of the infrastructure investment package), is an unwarranted exercise of the police power.

The County at present is operating a two tier regulatory system, one that grants a "long range" level through zoning, and one that grants a "short range" level through subdivision. In this way, the County is able to manage the linkage between its short-term fiscal policy and its short term land policy on a once-a-year decision-making basis (i.e., AGP and CIP), while at the same time allowing landowners to get incremental long-range zoning changes at different times during the year (through local zoning map amendments), and also allowing the Council to change zoning over large areas (through sectional zoning map amendments) at various times of the year, keyed to the work program for master plan amendments.

If the courts should overturn the AGP/APFO system, the County would lose its present ability to make an annual growth management linkage between its land policy and its fiscal policy, using a common future time horizon of 4-6 years. It would then be forced to either: (1) extend its annual fiscal management horizon to a much longer time frame, one commensurate with the holding capacity of its zoning envelope (now about 30 years); or (2) compress its zoning capacity to the much shorter fiscal time horizon of 4-6 years; or (3) both ex-

tend the fiscal and compress the zoning to some compromise time horizon in between the two extremes.

Without a common time horizon applied to the calculation of both fiscal supply and land demand, it is extremely difficult to know what the facts really are, in terms of the relationship between these two elements that drive each other in a perpetual cycle of demand and supply, let alone make good policy and management decisions. What is at issue in this question of time horizon is the matter of relative certainty versus uncertainty. Land that has received police power approval to develop (i.e., zoning, if there is no APFO), constitutes the equivalent of a cheque signed by government that the public facility needs and costs of this land, when developed, will be met on a timetable responsive to the cycles of the private market. Therefore, when this land supply is large, it represents a large potential fiscal obligation.

Staff concludes that this bridge probably should not be crossed before it is reached, but also that at least a continuing monitoring of this situation is prudent.

Research on Housing Prices and Policies

Chapter 1 has pointed out the present limitations of the TRAVEL model, with respect to simulating the effect on traffic congestion of major changes in relative housing prices. Conceptually, it would be possible to establish some mathematical relationship between the wage profile of the employment centers within the County, and the housing price profile of residential areas within

various distances from them. These could then be studied in relationship to the other factors of trip length, cost, etc. that have been the subject of much previous analysis.

What is needed to do this is a data base gathered from various surveys, including some new ones on wage structures by existing employers. The Council may wish to request a coordinated data gathering operation of this kind undertaken jointly by the Planning Commission and the Office of Economic Development, and other appropriate parties.

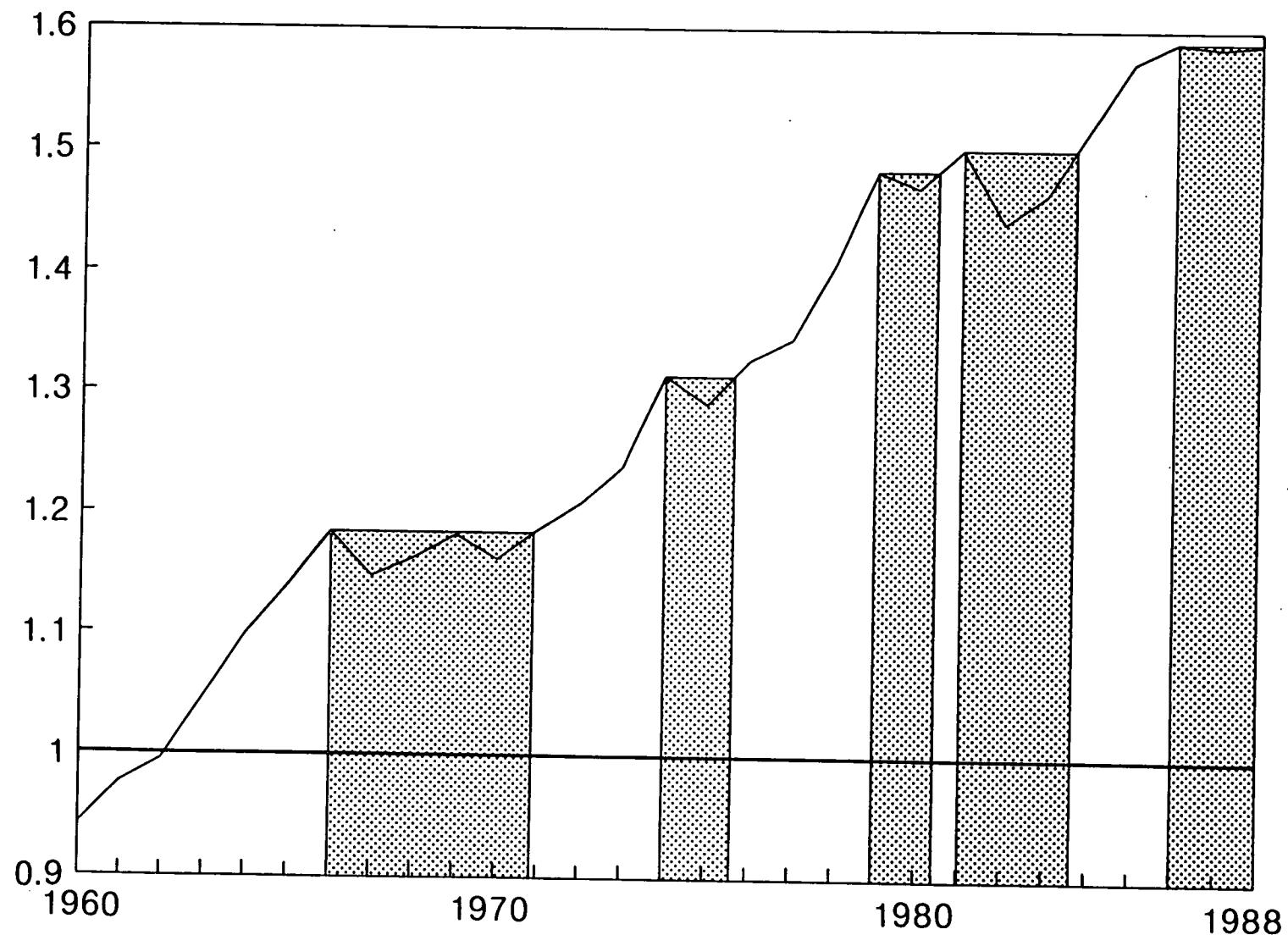
Studies are presently underway at the Metropolitan Washington Council of Governments on surveys of policies and techniques that could be implemented to assist in making housing more affordable than it is at present. With the retreat of the federal government from its previous levels of subsidy programs for affordable housing, the County's Moderate Priced Dwelling Unit (MPDU) program is probably the largest single source of lower-than-market-rate housing construction. This exercise of the police power results in 12.5 percent of all dwelling units (in projects of over 50 units) being offered for sale or rent at moderate prices. Further techniques for using the police power to induce the private sector to provide housing at lower than moderate costs need to be evaluated, but the constitutional limits on how far the police power can be used to control housing prices must be recognized. The only other general power of government, the purse power, also could be

used, as it is to a degree already, to provide local subsidies for housing, either directly or indirectly.

Figure 4.1 shows that, in the past, there has been a period after each peak period of job increase when the housing market has caught up relatively with the job market. We appear to be in such a period now, and the signs that are now visible of housing price softness at the upper end of the price range may herald a period of at least a few years in which the market price of housing will not rise as rapidly as it has in recent experience. Whether or not this occurs, the research effort suggested above seems to be a highly desirable addition to the county's awareness of how its growth management actions intermesh with those of the private market.

FIGURE 4.1

JOBs PER HOUSEHOLD, 1960-1988



SOURCE: MCPD, RESEARCH DIVISION
1987 AND 1988 NUMBERS ARE ESTIMATED

STAFF

Primary Staff — M-NCPPC

Richard Tustian Project Director
Patrick Hare Project Manager
Michael Replogle Coordinator, Transportation Modeling
Robert Winick Chief, Transportation Planning Division
Fred Peacock Coordinator, Fiscal Modeling
Drew Dedrick Chief, Research Division

The review and comments of the following Directors, and their staff, of the County Executive and the County Council were helpful at checkpoints during the evolution of this Study.

Max Bohnstedt Director, Department of Finance
Dyan Brassington Director, Office of Economic Development
Richard Ferrara Director, Department of Housing and Community Development
Robert Kendal Director, Office of Management and Budget
Robert McGarry Director, Department of Transportation
John Menke Director, Office of Environmental Protection
Meg Riesett Director, Office of Planning Policies
Arthur Spengler Director, County Council Staff

Contributing Staff—M-NCPPC

Nazir Baig	Coordinator, Environmental Planning Division
Jorge Valladares	Chief, Environmental Planning Division
Larry Ponsford	Coordinator, Urban Design Division
Douglas Alexander	Chief, Urban Design Division
Melissa Banach	Chief, Community Planning North Division
Perry Berman	Chief, Community Planning South Division
Dale Price	Chief, Development Review Division
Joseph Anderson	Coordinator, Transit Planning
Don Vary	Planner, Transportation Modeling
Andrew Perez	Planner, Fiscal Modeling
Brian McMahon	Planner, Environmental Planning
Daniel Thomas	Designer, Core Group Support Team
Megan Carroll	Planner, Core Group Support Team
Jolene Ostler	Planner, Core Group Support Team
Jeanne Venn	Administrative Aide
Sheila Carter	Administrative Aide
Revonda Long	Administrative Aide
Barbara Baker	Computer Support Specialist
Norah Lee Bland	Publications Facilitator
Jim Sumler	Drafting Technician
George Marenka	Drafting Technician
Marcie Wolf-Hubbard	Graphics Assistant
David Fugitt	Mapping/Graphics Assistant Supervisor
Marie Elaine Lanza	Mapping/Graphics Supervisor
Alan Lemke	Administrative Supervisor
Brandt Hare	Administrative Services Supervisor
Charles Coleman	Reproduction Clerk

Consultant Credits

Name of Firm	Nature of Work
COMSIS	Transportation Modeling
Richard Kuzmyak	
C. Y. Jeng	
Ron Malone	
Richard H. Pratt	
DeLeuw, Cather and Company	Transportation Analysis and Cost Estimating
Clarke Rees	
Douglas & Douglas, Inc.	Transportation Modeling
Bruce Douglas, Ph.D	
Barry Zimmer	
Greater Washington Research Ctr.	Demographic Analysis
George Grier	
Hammer, Siler, George Associates	Housing Analysis
Elizabeth Davison	
JHK & Associates	HOV Analysis and Costing
Morris J. Rothenberg	
Joint Center for Housing Studies	Housing Cost Modeling
Harvard University	
Henry Pollakowski, Ph.D.	
Rivkin Associates, Inc.	External Factors
Malcolm and Goldie Rivkin	
Tischler & Associates, Inc.	Fiscal Modeling
Paul Tischler	
The Wharton School of the University of Pennsylvania	Housing Cost Modeling
Susan Wachter, Ph.D.	

